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ABSTRACT

The document presents the final report on a 1 year study of 267 mother-infant pairs at risk for child abuse, in which maternal characteristics, infant temperament, environmental stress factors, and mother-child interaction were examined in an attempt to identify differences between mothers who mistreat their children and those who do not. Three subgroups of Ss were compared: mothers who have abused, neglected, or in some way mistreated their infants: mothers matched for age, education, and marital status; and those providing excellent infant care. The total at risk sample and the subsamples are described, and the at risk prospective methodology is discussed. The excellent and inadequate care groups are described demographically. Baby temperament and neonatal organization data are presented, and their relationship to the quality of care the child receives is examined along with the relationship of parental factors and mistreatment. Most of the results focus on mother characteristics and their relationship to quality of care: however, some information on fathers is presented. Particular focus is placed on bonding, attachment, and deviant patterns of mother-infant interaction observed in feeding and play. Life stress data are also presented, along with implications and conclusions. (Author/DLS)

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FINAL REPORT

A PROSPECTIVE STUDY OF THE ANTECEDENTS OF CHILD ABUSE

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PREFACE

This report is a summary of a number of more detailed papers we have written over the past year. We had originally intended to append all of these papers, but due to the length of this final report and all of the papers, it was not practical. This final report does not include a thorough literature review or a detailed description of the data gathering procedures, statistical analyses or case studies. If the reader desires more information on a particular topic, please send for the appropriate papers.

The results of this report are based primarily on a comparison between 1) a subsample of mothers who have abused, neglected, or in some way mistreated their infants, 2) a subsample matched for age, education, and marital status, and 3) a subsample of mothers providing excellent care. The total at-risk sample and the subsamples are described in Chapter I along with a brief discussion of our "at-risk" prospective methodology, data gathering procedures, and a demographic description of the Excellent and Inadequate Care groups. Egeland and Brunnquell (1979) provide a more detailed discussion of our at-risk prospective approach. Chapter II contains the baby temperament and neonatal organization data and their relationship to the quality of care the child receives. Chapter III describes the relationship of parental factors and mistreatment. Most of the results focus on mother characteristics and their relationship to quality of care; however, some information on fathers is presented. Chapter IV contains the results of the mother-infant interaction variables and mistreatment with particular focus on bonding, attachment, and deviant patterns of mother-infant interaction observed in feeding and play. The life stress data are presented in Chapter V and the implications and conclusions are presented in Chapter VI.

We published some preliminary results of our research in the Journal of the American Academy of Child Psychiatry, which is listed below. We consider the results presented in this final report still to be preliminary; they differ somewhat from those reported in our earlier paper because of changes in the make-up of the Excellent and Inadequate Care groups, the inclusion of more data (which we continue to collect), and further statistical and case study analyses. As we learn more about the families and their environmental and life circumstances, our ideas about the factors affecting the quality of care provided a child will change. Ultimately, we hope to have a relatively clear picture of the abusive family and their life circumstances, as well as the high-risk family that provides adequate care.

Following is a list of papers on which this final report is based:

Egeland, B., & Brunnquell, D. An at-risk approach to the study of child abuse: Some preliminary findings. Journal of the American Academy of Child Psychiatry, 1979, 18, 219-236.

Egeland, B., & Vaughn, B. Failure of "bond formation" as a cause of abuse, neglect, and maltreatment. Submitted for publication.

Egeland, B., & Sroufe, A. Attachment and early maltreatment. Submitted for publication.

Vaughn, B., Deinard, A., & Egeland, B. Measuring temperament in pediatric practice. Journal of Pediatrics, in press.

Vaughn,B., Taraldson, B., Crichton, L., & Egeland, B. Relationship between neonatal behavioral organization and infant behavior during the first year. Infant Behavior and Development, in press.

Brunnquell, D., Crichton, L., & Egeland, B. Parental personality and attitude in disturbances of child rearing. Submitted for publication.

Brunnquell, D., & Egeland, B. Paternal personality and attitude in child care and failure of care. Submitted for publication.

Breitenbucher, M., & Egeland, B. Maternal expectations and abuse. Technical Report, University of Minnesota, 1979.

Egeland, B., Breitenbucher, M., & Rosenberg, D. A prospective study of the significance of life stress in the etiology of child abuse. Submitted for publication.

Egeland, B., Phipps-Yonas, S., & Johnson, J. Factors related to the incidence of abuse, neglect, and mistreatment. Technical Report, University of Minnesota, 1979.

Related Papers:

Brunnquell, D., & Egeland, B. Early child abuse screening. Technical Report, University of Minnesota, 1979.

Brunnquell, D., & Egeland, B. A psychometric evaluation of the Neonatal Perception Inventory, Technical Report, University of Minnesota, 1979.

Phipps-Yonas, S. Teenage pregnancy and motherhood. Submitted for publication.

Gove, F., Vaughn, B., & Egeland, B. The relationship between out-of-home care and the quality of infant-mother attachment in an economically disadvantaged population. Submitted for publication.

Vaughn, B., Joffe, L., Egeland, B., Deinard, A., & Waters, E. Relationship between neonatal behavioral organization and infant-mother attachment in an economically disadvantaged sample. Child Development, in press.

Vaughn, B., Waters, E., Sroufe, L. A., & Egeland, B. Stability and change in attachment in an urban poor population. Child Development, in press.

Cicchetti, D., Taraldson, B., & Egeland, B. Perspectives in the treatment and understanding of child abuse. In A. P. Goldstein (Ed.), Prescription for child mental health and education. New York: Pergamon Press, 1978.

Egeland, B., Phipps-Yonas, S., Brunnquell, D., & Deinard, A. A prospective study of the antecedents of child abuse. Caring, in press.

TABLE OF CONTENTS

Preface

Chapter I — Introduction — Page 1

- At-risk Methodology — Page 1
- Characteristics of Sample — Page 2
- Method — Page 4
  - Selection of the Abused, Excellent Care, and Matched Control Groups
  - Data Gathering Procedures
- Results — Page 10
  - Demographic and Medical Characteristics of the Excellent vs Inadequate Care Groups

Chapter II — Infant Characteristics and their Effect on the Quality of Care — Page 12

- Introduction — Page 12
- Results — Page 12
  - Discriminant Function Analyses of Brazelton and Nurses' Ratings
  - Carey Infant Temperament Scale

Chapter III — Maternal Factors and Child Abuse — Page 17

- Introduction — Page 17
- Results — Page 18
  - Factor Analysis
  - Discriminant Function Analysis
- Maternal Expectations and Child Abuse — Page 25
  - Results
- Paternal Personality and Attitudes in Child Abuse — Page 31

Chapter IV — Mother-Infant Interaction and Mistreatment

- Bonding — Page 35
  - Results and Discussion
- Attachment — Page 37
  - Results
  - Discussion

	Observational data on Mother-Child Interaction during Feeding and Play Situations	Page 42
Chapter V	Life Stress and Child Mistreatment	Page 45
	Results	Page 47
	Discussion	Page 48
Chapter VI	Implications and Conclusions	Page 50
	Incidence	Page 50
	"An Editorial"	Page 52
	Characterization of the Abusive and Neglectful Situation	Page 53
	Intervention	Page 57
References		Page 61

CHAPTER I

INTRODUCTION

The "At Risk" Methodology

The concept of "the child at-risk" has long been implicit in psychology and psychiatry, beginning with the individual clinician's prediction that "this child is in trouble" when to all appearances the child is making an adequate adjustment. It is only in recent years that this concept has been made explicit and has become a major focus in psychological research. In large part the "at-risk" studies have been undertaken in response to the questionable conclusions drawn from retrospective research. The latter work suffers from what Garmezy (1977) has referred to as "etiological error": looking backwards in time always provides a cause but the linearity and simplicity implied by such findings are misleading. Furthermore, post-hoc comparisons of deviant and normal groups may reveal little about what factors played significant roles in the various stages of development. The "at-risk" model is best suited for answering such questions.

A considerable amount of retrospective research has attempted to identify etiological factors involved in child abuse and neglect. This research has focused on identifying parental characteristics, environmental factors, and in a few instances child characteristics that differentiate abusing from nonabusing parents. Some consistent findings that have emerged imply that abused and neglected children come from families experiencing unusual amounts of social and economic stress (Alvy, 1975; Garbarino, 1976) and that abusing parents were themselves abused and neglected (e.g., Steele & Pollock, 1968). Abusing parents have been found to demand a great deal from their children (Steele & Pollock, 1968) and to have difficulty in dealing with aggressive impulses (Wasserman, 1967). The conclusions drawn from such retrospective research are that environmental stress, poverty, and certain parental personality characteristics are among the causes of child abuse. A most important question remains unanswered: why do some parents abuse or neglect their children while others, displaying the same personality characteristics or under the same stress, do not? For example, although there is a strong link between poverty and abuse, obviously not all poor parents abuse or neglect their children. We need to identify the precipitating factors that differentiate the family that abuses a child from the similar family that does not; an at-risk model of research is the best design for this task.

The "at-risk" methodology is probabilistic in its approach to pathology. It is based on the assumption that a group can be identified in which a certain problem will occur with a frequency great enough to warrant extensive study of a large sample of individuals, most of whom will not exhibit the particular pathology under study. The first step in "risk" research is the selection of this high-risk sample to be followed. Within this group, a large percentage of the sample will not

develop the problem. The large basically healthy group included in the sample provides the appropriate group for comparing the effects of the factors which put a child at-risk,for it is only in contrast to good outcomes within a sample that the major influences on poor outcomes can be identified.

One major advantage of the at-risk longitudinal approach is that it eliminates what traditionally has been an insurmountable problem -- distinguishing cause from effect. In retrospective studies of abusive and non-abusive parents it is often impossible to determine whether differences observed between the groups produced or resulted from abuse. One can make more definitive etiological statements by collecting data before mistreatment occurs.

In addition this design allows both for statistical analyses of objective data to find differences between the group that develops the problem and the remainder of the sample, and for detailed studies of individual cases to examine the interactions of a number of factors. The diversity of findings from earlier work on child abuse makes it clearthat any search for a single "cause" must fail. Child abuse is such a complex phenomenon that it can only be understood when the entire life situation of those involved is considered. One factor by itself may mean nothing but in combination with specific others may create a particularly malignant situation.

Our approach has been to examine the interaction of three broad and partially independent etiological factors studied in previous research: characteristics of the parents, environmental and sociological factors, and characteristics of the child. We chose to study a set of variables in the lives of a group of high-risk mother-child pairs who were followed throughout the child's first year of life. Two-hundered sixty seven women receiving prenatal care at the Maternal and Infant Care Clinics, Minneapolis Health Department, were enrolled in the investigation during their last trimester of pregnancy. The families came from lower socio-economic backgrounds with the majority on welfare. The base rate for abuse and neglect in the Public Health Clinic population had been estimated at 1 to 2 percent, a rate considerably higher than that for the state in general and one which defined the nature of the sample at-risk. In the research reported here, maternal characteristics, infant temperament, environmental stress factors, and the interaction of the caretaker and infant are examined in an attempt to identify differences between mothers who mistreat their children and those who do not.

Characteristics of the Sample

Originally 414 mothers receiving prenatal care at the MIC Clinic were contacted and of this group 139 were unable to participate. In 19 cases, the husband or boyfriend refused to let the mother participate, 31 were moving, 17 delivered before the prenatal testing, 5 babies were placed for adoption, and 2 babies died during delivery. The remainder

declined to participate for a variety of reasons, such as language problems, too busy, and refusal to be observed during feeding. A comparison of the clinic records of the families who participated versus those who declined, did not reveal any differences between the groups in terms of age, education, occupation, and clinic staff judgment of risk and other variables noted in the file.

Of the total sample (N = 267) enrolled in the project, approximately 55 families have dropped out as of the present time. Although every attempt was made to enroll fathers in the study, only 29% participated. These numbers change periodically as families move out of the area but then return a few months later. The major reasons for dropping or being dropped were moving out of the city and moving without leaving a forwarding address. Four babies died during the first year of the study and one family was dropped from the study because their baby had serious medical problems. The fact that we have lost little more than 20% of our families over the 3-1/2 years is quite remarkable considering the mobility and nature of the sample. The low dropout rate likely reflects the fact that the mothers are being paid to participate, the testers have excellent rapport with the families, we have an excellent working relationship with various city and county social agencies who have been helpful in locating certain families, and Dr. Deinard, a co-investigator, serves as a pediatrician for most of the children.

In general, the families are from lower SES backgrounds, and at the present time the majority are on welfare. The mean age of the mothers at delivery was 20.52 years (s.d.=3.65) with a range from 12 to 34 years. Sixty-two percent were unmarried at the time of delivery. Educational distribution is somewhat heterogenous; 41% of the mothers did not finish high school; 54% completed 12 years of school; 20% of that group went on to college. Five percent did not graduate from high school, but they are continuing their education in some type of vocational school. One-third of the mothers were unemployed at the time they became pregnant, and an additional 22% were students, the majority of whom were in high school. Jobs possessed by those who were employed were mainly of the temporary unskilled variety with a few of the women working as secretaries and sales women. Nine percent of the sample were Native American, 8% Black, 4% other, and a large percentage of the children are of mixed racial backgrounds.

Forty-seven percent of the mothers were reported to have experienced medical problems during pregnancy. The mean gestational age was 39.66 weeks (s.d. = 1.59) and the length of labor was 12.79 hours (s.d.= 7.80). The mean birthweight was 3261 grams (s.d. = 541, range from 1580 to 4720). According to clinic medical records, complications existing during pregnancy included: 41 mothers had serious infections, e.g., pneumonitis; 16 showed excessive weight gain (greater than 40 pounds); 15 used hard drugs during pregnancy; and 13 mothers had venereal disease. Thirty-seven percent of the mothers were judged by the clinic staff to have inadequate nutrition, and 33% were reported

to be unprepared for the baby, for example, arrangements had not been made for a place for the baby to sleep. Fifty-two percent had delivery complications and 12 percent of the infants were born prematurely (birthweight less than 2500 grams and gestational age less than 37 weeks).

Fifty-five percent of the infants were males and 31% of the infants were reported to have medical problems at birth. Eighteen infants had severely elevated bilirubin, 9 had instances of intrauterine growth retardation; 3 had severe tremors, and a number were reported to have various kinds of congenital defects.

Method

Selection of the Abused, Excellent Care and Matched Controls Groups: From the sample of 267 families three subgroups were formed on the basis of judgments made by trained observers in the home. Differences among these three subgroups form the major part of the data on which this report is based.

The Inadequate Care group consisted of 32 mothers who were involved in a clear incident of abuse, neglect, or severe maltreatment of her child. At each visit to the mother's home during the first 18 months of the infant's life the observers filled out the Child Care Rating Scale (Egeland & Deinard, 1975). This scale consisted of selecting a variety of items from three different sources: existing scales such as the Childhood Level Living Scale (Polansky, Borgman, & DeSaix, 1972); professionals in the Minneapolis and St. Paul area working with abusing and neglecting families; and observations of the home situation of a number of abusing and neglecting families. The final set of items were selected in terms of how well they differentiated abusing and neglecting families from similar families with no known abuse or neglect. The items on the scale include evidence of physical violence, failure to safeguard the house against common childhood dangers, failure to provide for the basic physical needs of the child, bad living conditions, neglect, and failure to thrive.

After each visit to the mother's home, the observers completed the Child Care Rating Scale. Actual physical abuse was noted in 4 cases, neglect and abuse in 3 cases, and severe neglect in 25 cases, which also included 3 cases of failure to thrive. Currently, 4 are active Child Protection cases, and 11 cases at one time or another were active Protection cases. The remainder of the families in the Inadequate Care group have contact with some social agency. The majority are active with the Child Welfare Program, some with the Welfare Work and Training Division and many have a public health nurse or social worker assigned from the Public Health Clinic. The number of mothers who have mistreated their children has varied, depending on the age of the child and the life circumstances of the mother. In earlier reports (e.g., Egeland &

Brunnquell, 1979) 26 mothers were in the Inadequate Care Group. At the present time, there are 32 mothers in this group and they form the basis for the statistical analyses for this report.

The Excellent Care group included 33 mothers who met the physical and emotional needs of their children exceptionally well according to the observations of the testers. The mothers were good at encouraging the child's growth and development. They provided adequate care in terms of feeding, meeting the child's health care needs, protecting the child from possible dangerous situations, and not leaving the baby unattended (for long periods of time) or with unknown baby-sitters.

The Matched Care group included 32 mothers who did not appear in the Excellent or Inadequate Care groups but who were comparable to the Inadequate Care group in terms of age, education, and marital status. Comparisons were made on a number of variables between the Excellent and Inadequate Care groups and between the Inadequate and Matched groups.

Data Gathering Procedures: The data gathering procedures and the scheduled time for administering them are listed in Table 1. During the 36th week of pregnancy, each mother completed a battery of tests assessing intellectual level (Shipley-Hartford), emotional factors (aggression, defendence, impulsivity, succorance, and social desirability - Personality Research Form, Jackson, 1967; anxiety - IPAT, Cattell & Scheier, 1963; and locus of control - Rotter, 1966) and expectations and perceptions regarding childbirth and parenting (Broussard & Hartner, 1971; Schafer & Manheimer, 1960; Cohler, Weiss, & Grunebaum, 1976). Specifically, these latter tests measure such characteristics as expected ease of caring for the baby, emotional reactions to pregnancy, attitudes towards childrearing, interpersonal maturity, and understanding of psychological complexity. All of the measures were selected on the basis of demonstrated reliability and validity as well as the ease with which they could be administered to adults with below-average reading skills. The battery, minus the Shipley-Hartford, was repeated when the infant was three months old.

Three different approaches were used at birth and three months to assess infant temperament. First each infant was rated on the Brazelton Behavioral Neonatal Assessment Scale (1973). Because the correlations of these scores from day seven to day ten were quite low, we used a combination of scores obtained when the baby was in an optimal state (Vaughn, Taraldson, Crichton, & Egeland, 1979). Naturalistic observation ratings were provided by having the nurses in the newborn nursery rate each newborn in the study on such factors as irritability, activity level, and soothability. These scores were moderately stable across the four day period. Finally, at three and six months, each mother completed the Carey Infant Temperament Questionnaire (1970).

Mother-child interaction was observed in a variety of situations when the child was two, three, four, six, and twelve months. At two

Table 1

List of Tests

Tests Given to Mother and when Possible Father During Last Trimester

Test	Variable Measured	Developed by:
Shipley Hartford Vocabulary Test	Intelligence	Shipley & Hartford
Personality Research Form Aggression Defendence Impulsivity Succorance	Personality Characteristics	Jackson (1967)
IPAT Anxiety Scale Questionnaire	Anxiety	Cattell & Scheier (1963)
Inventory of Beliefs	Locus of Control	Rotter (1966)
Neonatal Perception Inventory	Mother's Expectations	Broussard & Hartner (1971)
Maternal Attitude Scale: Questionnaire for Mothers Appropriate vs inappropriate control of child's aggression Encouragement vs discouragement of reciprocity Acceptance vs denial of emotional complexity in child care	Mother's attitude toward developing mother-child relationship	Cohler, Weiss, Grunebaum (1976)
Pregnancy Research Questionnaire Fear for Self Desire for Pregnancy Dependency Fear for Baby Maternal Feelings Irritability and Tension	Mother's feelings regarding pregnancy	Schaefer & Manheimer (1960)
Knowledge of Child Care and and Expectations of Child Development	Mother's knowledge	Staff*

Information Obtained at Birth

Nurses' Ratings of Newborn	Infant Temperament and Characteristics	Ferreira & Staff*
Brazelton Behavioral and Neurological Assessment Scale	Psychological and Physiological Characteristics of Newborn	Brazelton (1973)

Tests Given at Three Months

Test	Variable Measured	Developed by:
Note: All the tests given during the last trimester are also given at three months, plus the following:		
Life Stress Scale	Amount of Environmental Stress on Mother	Cochrane & Robertson and Staff*
Enjoyment of Baby Scale	Mother's feelings regarding infant	Staff*
Carey Infant Temperament Scale	Measure of Infant Temperament	Carey
Three-Month Observation & Rating:	Observation of Mother-Infant	
Waiting Room Rating Scale	Interaction	Staff*
Doctor's Rating Scale		Staff*
Observation of Feeding Situation		Ainsworth and Staff*

Tests Given at Six Months

Observation of Feeding and Play	Observation of Mother-Infant Interaction	Ainsworth & Staff*
Doctor's Rating Scale	Observation of Mother-Infant Interaction	Staff*
Waiting Room Rating Scale	Observation of Mother-Infant Interaction	Staff*

Tests Given at Nine Months

Bayley Scale of Infant Development	Infant's Mental and Motor Development	Bayley
Mother's Expectations of Child Ability	Mother's expectation of child's performance on Bayley	Staff*
Observation of Mother and Infant during Bayley	Mother-Infant Interaction	Staff*

Tests Given at 12 Months

Strange Situation	Security of Attachment	Ainsworth and Wittig
Interview	General Information	Staff*
Life Stress Scale	Amount of Environmental Stress on Mother	Cochrane & Robertson and Staff*

Tests Given at 12 Months (cont.)

Test	Variable Measured	Developed by:
Prohibition of Forbidden Objects	Mother's Style of Discipline	Staff*
Uzgiris and Hunt Assessment in Infancy Scale	Cognitive Development	Uzgiris & Hunt

Throughout First Year

Child Care Rating Scale	Ratings of Quality of Care	Staff*

Tests Given at 18 Months

Strange Situation	Security of Attachment	Ainsworth & Wittig
Interview	General Information	Staff*

* Staff includes: Egeland, B., Deinard, A., Sroufe, L.A., Benton, P., Bielke, P., Breitenbucher, M., Brunnquell, D., Cicchetti, D., Courtney, M., Crichton, L., Dodds, M., Gilbert, A., Joffe, L., Johnson, J., McCormick, C., Merrick, S., Miller, G., Pastor, D., Roe, A.H., Rosenberg, D., Taraldson, B., Vaughn, B.

and four months, mother and infant were observed while waiting for an appointment in the Public Health Clinic. Observers visited the home to watch a feeding situation at three months and both feeding and play situations at six months (Egeland, Deinard, Brunnquell, & Taraldson, 1975). Some of the behaviors observed included quality of verbalization, expressiveness, quality of physical contact, facility in caretaking, sensitivity, cooperation, and positive and negative regard. In the feeding situation, 24 different variables were rated using a nine-point scale based on Ainsworth, Stayton, and Bell's work (1969) and the work of Egeland, Deinard, Taraldson, and Brunnquell (1975). The interrater reliabilities for the feeding variables ranged from .43 to .86, and the Lawlis-Lu measure of interrater agreement for all items was highly significant. The items with lowest reliability were those measuring the baby's state, while high level of agreement was found on items such as quality of physical contact (.78), facility in caretaking (.84), and general sensitivity (.82). One feeding situation was observed at three months and two were observed at six months (Egeland, Taraldson, & Brunnquell, 1978).

The six-month play situation consisted of 15 minutes of observation. In the first component mothers were asked to engage the infant in physical play, not mediated with toys. Next they were given a toy truck attached to a string and told to "teach" the baby that (s)he could retrieve the toy by pulling on the string. In the final component the mothers were given several toys and asked to play with the baby in any way they might choose. The mothers and infant were rated on 12 variables using a 9-point scale (Egeland, Deinard, Brunnquell, & Taraldson, 1975). Such variables as baby's activity, coordination and satisfaction, and mother's supportiveness, patience, and amount of reciprocal play were rated.

They Bayley Scales of Infant Development (1969) were administered to each infant at nine months. Prior to the actual testing, each woman was asked to indicate whether she expected her child to pass certain of the Bayley items. This was done to determine whether discrepancies between the mother's expectations and the child's performance were related to other variables.

At 12 months three kinds of assessments were undertaken. First the disciplinary patterns of the mother were videotaped in a setting which included a variety of forbidden objects. The situation provided an opportunity to observe the child's exploratory behavior and the maternal reaction, as well as the type and effectiveness of the disciplinary techniques she employed. Secondly, the Ainsworth and Wittig (1969) Strange Situation was used to assess security of attachment as evidenced by the child's reaction to mother's departure from and return to the experimental room. The other 12-month measure was the Uzgiris and Hunt Ordinal Scales of Psychological Development (1975).

To provide information regarding the home environment and family

circumstances, each mother completed a modified version of Cochrane and Robertson's (1973) Life Stress Inventory when her infant was three and 12 months of age. Additional information about the home situation was obtained from the clinic social worker's files on the families. In addition, at 12 and 18 months the mothers were given an interview to assess mother's living arrangements, relations with family, friends, and alleged father, attitudes and feelings regarding the baby, and psychological well-being, and feelings regarding changes in her life as a result of having a baby. This report does not report the results for certain of the variables.

Results

Demographic and Medical Characteristics of the Excellent vs Inadequate Care Groups: Large differences were found between the Excellent and Inadequate Care groups on age, education, preparation for the baby, and support from father and family. The mean age for the Excellent Care group was 23.45 years compared to 18.68 years for the Inadequate Care group ($p < .0001$). All of the Excellent Care mothers had graduated from high school (mean grade equivalents = 13.10) whereas the majority of the Inadequate Care group had not graduated (mean grade equivalent = 10.00). Forty percent of the Excellent Care group were unmarried at the time of delivery compared to 82.0% of the Inadequate Care group ($X^2 = 10.86$, $p = .0044$). The majority of the mothers in the Excellent Care group had the support of the alleged father (76.0%) whereas only 35.0% of the mothers in the Inadequate Care group had such support ($X^2 = 6.07$, $p = .014$). Similarly, 75% of the mothers in the Excellent Care group had support from their families and 53% of the Inadequate Care group had such support.

Related to the difference in educational level, it was found that the mothers in the Inadequate Care group were less prepared for the baby. Only 38% of the Inadequate Care group attended childbirth classes compared to 91% of the Excellent Care group ($X^2 = 11.42$, $df = 2$, $p = .003$). The public health nurses' ratings of mothers' preparation for the baby showed 81% of the Excellent Care group prepared and 0% of the Inadequate Care group ($X^2 = 18.63$, $df = 2$, $p = .0001$). The nurses rated the majority of Inadequate mothers as having unrealistic expectations about raising their baby. Neither group had planned to get pregnant (29% of Excellent mothers and 8% of the Inadequate mothers, $X^2 = 1.91$, ns), but it was very clear that the mothers in the Excellent group made much more of an effort to prepare for the baby than did the Inadequate Care group mothers.

One finding that is difficult to explain is the large percentage of Excellent Care mothers intending to breast feed (75%) compared to 37% of the Inadequate Care group ($X^2 = 7.12$, $p = .0076$). The percent of Excellent Care mothers who were actually breastfeeding their infants at three months was 59%, and for the Inadequate group 9%.

In summary, the mothers in the Inadequate Care group were young, relatively uneducated, lacking in support of father and family, and unprepared for the baby. Despite these shortcomings, there was only a tendency for the mothers in the Inadequate Care group to experience more pregnancy and birth complications and to have infants with more problems. For the total sample, there was a relatively large number of preterm infants, pregnancy and birth complications and infants with problems, but these difficulties did not seem to affect the quality of care the child received.

CHAPTER II

INFANT CHARACTERISTICS AND THEIR EFFECT ON THE QUALITY OF CARE

Introduction

The early investigations of abuse and neglect were based generally on psychiatric or sociological models of child abuse which focused on parental pathology or on environmental stress. Little attention was given to the role of the victims. Only recently has any research consideration been given to the children and to the question of whether or not their behaviors or personalities might elicit abuse or neglect from the parents. It seems possible that the reason some mothers are abusive while others with similar personalities and in similar situations are not, is that certain characteristics of their children may lead them to take out their frustrations in an inappropriate manner. It may be that rather than being simply the outlet for the expression of pre-existing parental hostility and aggression, particular children are the source of such emotional reactions. Gelles (1973) and Parke and Collmer (1976) have suggested that certain traits or behaviors may render a child particularly difficult and unrewarding to care for or even tolerate. Proponents of this view present as evidence data indicating that groups of abused children have unexpectedly high rates of mental retardation and hyperactivity (Terr, 1970), as well as other miscellaneous medical problems during early infancy (Kempe, 1971; Lynch & Roberts, 1977). While it is certainly plausible that undesirable characteristics in children will increase the probability that they will be abused, it is clear that such an account is insufficient in and of itself, since most problem children are not subject to abuse. What is important to extract from this model, however, is the notion that the contribution of the abused child to his or her situation should be considered. There is an abundance of evidence in the literature on child development suggesting that children do affect their caretakers (Bell, 1971; Lewis & Rosenblum, 1974). It was for these reasons that we chose to include in our design several measures of infant characteristics which were described in the methods section of this report.

Results

Regarding pregnancy and delivery information, there were no differences in sex of the infant, type of delivery, gestational age, length of labor, Apgar at 1 minute, and delivery and pregnancy complications between the Excellent and Inadequate Care groups. The difference in birthweight between the Excellent Care group (3,453 grams) and the Inadequate group (3,325 grams) was not significant. A difference approaching significance ($p = .055$) was found for the Apgar at five minutes and the medication received during delivery ($X^2 = 6.56$, $p = .082$). Forty-six percent of the Excellent Care group and 18% of the Inadequate

Care group received anesthesia. The majority of the mothers in the Inadequate Care group (67%) received anesthesia and tranquilizer. There were no differences in the number of premature births (2 in each group), or infant anomalies. Pregnancy complications were reported for 42% of the Excellent Care group and 65% of the Inadequate Care group (X^2 = 2.33, df = 1, p = .127), and delivery complications were reported for 45% and 55% of the groups, respectively (X^2 = .267, df = 1, p = .605).

The 27 items from the Brazelton Neonatal Assessment Scale (1973) were subjected to a principal axes factor analyses with varimax rotation to determine whether or not there were certain factor scores which could be included in subsequent analyses. Five such factors emerged. These were labelled Orientation, Irritability, Motor Maturity, Physical Ability/Body Tonus, and Consolability.

A principal axes factor analysis with varimax rotations was also carried out on the 17 ratings made by the nurses in the newborn nursery. While these were intended primarily as measures of infant characteristics, they included in addition assessments of certain maternal variables. Four significant factors were isolated: Baby's Alertness/Activity, Mother's Interest in Baby, Baby's Contentment, and Ease of Care for Baby.

Discriminant Function Analyses of Brazelton and Nurses' Ratings: The results of the discriminant function analyses involving the baby variables are reported in Table 2. Using the factor scores from the Brazelton and the Excellent and Inadequate Care groups as criteria groups, the percent correct classification was 71.0 (p = .001). Factor II Irritability contributed most to the prediction. The prediction based on the nurses' ratings achieved an overall correct classification rate of 59.5% (p = .25).

When the Inadequate and Matched Care Groups are used as criteria groups, the prediction based on nurses' ratings was 56.3% (p = .317). The same analyses using the factor scores from the Brazelton resulted in a 70.3 (p = .001) overall percent of correct classification. Factor Irritability and III Motor Maturity contributed most to the prediction. Surprisingly, the Orientation factor was dropped because it did not contribute to group membership. In the comparison of the Excellent and Inadequate groups the Orientation factor was relatively important.

The baby variables as assessed by the Brazelton appear to be, at least in some cases, important in determining the later quality of care the child receives regardless of age or educational level of the mother.

Carey Infant Temperament Scales: As described previously the mothers filled out Carey's Infant Temperament Questionnaires (ITQ) when their children were three and six months old. In addition to reporting the relationship between the ITQ and quality of care the

Table 2

Discriminant Function Analyses of Baby Variables

Analysis	% correct classification	X^2	signif.	Wilks Lambda	signif.	Variables with highest Discriminant Function Coefficient
Good vs. Inadequate						
Nurses Ratings	59.5	1.324	.250	.88517	.252	low mothers' interest low ease of care for baby low baby's alertness/activity
Brazelton	71.0	10.903	.001	.78152	.015	low irritability low orientation motor maturity low physical ability/body tonus consolability
Inadequate & Matched						
Nurses Ratings	56.3	1.00	.317	.591		ease of care of baby mothers' interest baby's contentment baby's alertness/activity
Brazelton	70.3	10.56	.001		.006	low irritability motor maturity low physical ability/body tonus

results reported below contain a summary of the psychometric evaluation of the ITQ.

Several dimension scores at 3 and 6 months are significantly different from those reported for Carey's standardization sample (Vaughn, Deinard, & Egeland, 1979). These differences, though quite small, are statistically significant, because of the large groups involved. There were also several significant changes from 3 to 6 months within our sample. While Carey never reported age differences in his work, our findings may be due to the slightly younger age at which our sample was rated. The youngest infants in Carey's standardization sample were 4 months old. The test-retest reliabilities for the nine dimension scores between 3 and 6 months ranged from .20 (Persistence) to .60 (Threshold). There were significant differences in means between 3 and 6 months on six of the nine dimensions (Vaughn, Deinard, & Egeland, 1979). The ITQ dimensions were used to diagnose the infants as "easy", "intermediate low", "intermediate high", and "difficult". There was considerable stability in the diagnoses over the three-month period, especially for the "easy" and "intermediate low" categories (X^2 = .36.87, df = 9, p= <.001). Nevertheless many infants' categories change across time which raises certain doubts about the usefulness of the instrument for making long-term predictions.

Most of the validity data for the ITQ have involved comparisons of its scores with results from the New York Longitudinal Study (NYLS) interview technique. Unfortunately, there are few observable behavioral dissimilarities between "easy" and "difficult" infants. Carey (1970, 1972b) has noted that mothers often disagree with ITQ diagnoses for their babies. One possible explanation for the discrepancy may be related to individual differences among mothers rather than among babies. That is, maternal psychological characteristics may influence the way in which the woman responds to the ITQ items. If this is the case to any large extent, the scores may reflect more about her than her child.

We sought to provide data on the discriminant validity of the ITQ by comparing mothers of the four types of infants ("easy", "intermediate low", "intermediate high", and "difficult") on the basis of their prenatal psychological test scores. In brief, we found that eleven of the 20 variables discriminated significantly among the four diagnostic categories. These differences were in the expected direction: mothers of "difficult" infants were more anxious and less desiring of motherhood; furthermore, they expected their babies to be "difficult" (Vaughn, Deinard, & Egeland, 1979). Our data indicate the need for caution in interpreting ITQ scores since they seem to measure maternal attributes as well as infant temperament. Such advice is probably applicable to any technique which utilizes a parent as the source of information about a child. It points once again to the problems inherent in teasing apart causal factors attributable to a single party in predicting a phenomenon (such as child abuse or neglect) which involves both that individual and others.

Even though the reliability and validity of the ITQ are somewhat questionable, we found a relationship between the type of infant ("easy/difficult") and the Excellent and Inadequate Care groups (X^2 = 12.26, df = 3, p = .007). Sixty-four percent of the Excellent Care group rated their babies as "easy" compared to 21% of the Inadequate group. Only two mothers in the Excellent Care group and 6 in the Inadequate group rated their infants as "difficult". Similar results were found using the six months' ITQ (X^2 = 13.16, df = 3, p = .0043). While eight of the inadequate mothers rated their infants as difficult, this was true for none of the Excellent Care mothers.

Comparing the Excellent and Inadequate Care groups on the nine dimensions of the ITQ given at 3 months, significant differences were found on four dimensions: the mothers from the Inadequate Care group rated their infants as less active, less adaptable, less approachable, and more fussy. At six months three significant differences were found. The Inadequate mothers rated their infants as not adaptable, irregular, and not approachable. When the Inadequate Care group was compared to the Matched group, there was only one significant difference at 3 months (intensity) and at six months no differences were found.

In general, the mothers in the Excellent Care group perceived their infants as easier to care for and typically they rated them more positively on a number of dimensions. In view of the results presented earlier, it is doubtful if the infants in the Inadequate Care group were actually more difficult. It is more likely the case that these infants are rated lower because of mothers' anxiety and unrealistic expectations, rather than any behavior of the baby. The babies are not different, the mothers just see them as different. Thus, even though the ITQ is measuring maternal attributes as well as infant temperament, the diagnostic categories should be treated as clinically significant. Perhaps we should consider a "difficult mother syndrome" as well as a difficult infant syndrome when evaluating the results of the ITQ.

CHAPTER III

MATERNAL FACTORS AND CHILD ABUSE

Introduction

Most of the early investigations focused on the contributory role of the parent in abuse, the mistreatment being viewed as the behavior of disturbed individuals who could not control their actions. Some studies purported to show that large proportions of child abusers were psychotic or neurotic (e.g., Wooley & Evans, 1955). Others portrayed the abusive parent as coming from a multi-problem family whose deficits and liabilities encompassed the entire spectrum of personal and social pathology (Parke & Collmer, 1975; Sameroff & Chandler, 1975).

The role of the personality of the parent has received less emphasis, however, as interactive (child-parent) models and sociological "explanations" of abuse have become popular. While this may reflect general shifts within psychology as a discipline, it also stems from the fact that attempts to demonstrate that abusive parents possess a unique constellation of personality traits or other characteristics (which presumably increase the likelihood that they will engage in abusive behavior) have yielded inconsistent results. A wide array of disparate, sometimes contradictory, traits has been implicated (Gelles, 1973; Parke & Collmer, 1976; Spinetta & Rigler, 1972), and it has become clear that parental emotional disturbance is neither a sufficient nor necessary condition for abuse to occur.

Yet there are some post hoc studies which indicate that parental personality and attitudinal variables are important. Paulson and colleagues (1975) developed an MMPI scale which differentiated abusing and control groups. Disbroew, Doerr, and Caulfield (1977) included personality variables as a significant element in their multivariate approach for predicting abuse. More recently Spinetta (1978) has used the Michigan Screening Profile of Parenting (Helfer, Schneider, & Hoffmeister, 1978) and found that factors such as tendency to become upset and inability to separate parental and child feelings discriminate abusive groups from controls.

This latter finding is consistent with Smith and Hansen's (1975) contention that abusing parents share certain misunderstandings with regard to the nature of child rearing and have unrealistic expectations concerning early development. As evidence they cite the fact that the personal histories of these parents often include abuse or neglect with an absence of good models of parenting. Out of ignorance and/or deprivation, such individuals turn to their children to satisfy their own psychological needs.

It was in the context of all of these results and with the assumption

that abuse has multiple "causes" some of which involve parental characteristics that we decided to explore certain parental variables. As described above, the measures we chose to use often went beyond traditional personality constructs such as impulsivity or aggressiveness to include the more integrative aspects of functioning.

The instruments used to assess parental personality and attitudes were outlined in the methods section of this report. They included emotional and intellectual factors as well as expectations and perceptions. We present here the results of a factor analysis of the prenatal and 3-month mother variables and data on the discriminatory power of factor scores in predicting membership in the Inadequate vs Excellent Care groups and Inadequate vs Matched Care groups. Similar discriminant function analyses were done using rationally derived constructs such as Impulsivity, Anxiety, Level of Personal Integration, Maternal Expectations, and General Personality.

Results

Factor Analysis: Since the sample size for the Excellent and Inadequate Care groups was relatively small, it was not possible to use separate test scores in the discriminant function analyses or group comparisons. In order to reduce the data into a manageable form for analyses, a principal axes factor analysis (varimax rotation) of the prenatal and 3-month test data was done on the entire sample of mothers.

Four interpretable and stable factors appeared from the prenatal and 3-month data sets. These were called Impulsivity-Anxiety, Negative Reactions to Pregnancy, Psychological Complexity, and Hostility-Suspiciousness. The first and last of these factors seem to represent traditional personality variables. The second one, as its name implies, taps concerns that the mother has regarding her pregnancy and personal health. Psychological Complexity, Factor III, is perhaps the most interesting factor. It relates to the emotional and intellectual maturity necessary for adequate mother-child relations. The finding that a good understanding of what a child might feel and do correlates highly with a healthy and balanced emotional reaction to the child by the parents implies a certain integrity of ego functioning which may subsume many aspects of personality. While reflecting intelligence and general knowledge, this factor goes beyond such domains to include the ability to deal effectively with the ambivalent and stressful affect inherent in pregnancy. The moderation of these difficult feelings appears to be independent of other personality variables.

The stability of the factors between the prenatal and 3-month testing is noteworthy especially given the major life change which has occurred for the mother in that period. The order of the factors is slightly different between the two testing periods and two additional factors were found at 3 months: Low Desire for Motherhood and Dependence.

Discriminant Function Analysis: For this set of discriminant function analyses, the Excellent, Inadequate, Random, and Matched Care groups were criteria groups and the various sets of prenatal and 3-month mother test scores were used to estimate how well that set of variables differentiate the preselected groups. The results are reported in terms of percentage of correct classification. As indicated previously, the limited sample sizes prevented us from using separate test scores in the discriminant function analyses. Either factor scores or various combinations of test scores were used. These various combinations of variables were expected to relate to the constructs impulsiveness, general anxiety, level of personal integration, maternal expectations, and general personality.

The first set of discriminant function analyses consisted of prediction of group membership in the Excellent or Inadequate Care groups. Discrimination using each of the five constructs was tested with the prenatal and 3-month data, with overall correct classification rates ranging from 64.6% ($p = <.018$) for the prenatal impulsiveness construct to 83.3% ($p = <.0001$) for the three-month level of personal integration construct (see Tables 3 and 4).

Since it was clear from other analyses that age, education, and marital status yielded significant differences between the Excellent and Inadequate Care groups (Egeland & Brunnquell, 1979), the five constructs were used in discriminant function analyses with the Inadequate and Matched Care groups as the two criterion groups. They were matched for age, education, and marital status. Using prenatal variables the impulsiveness, general personality, and level of personal integration analyses were significant, yielding 64.1% ($p = .021$), 68.8% ($p = .003$) and 79.7% ($p \quad .001$) rates of correct classification, respectively. In the 3-month testing, only the level of personal integration constructs yielded a significant discriminant function analysis with a 67.2% ($p = .006$) correct classification rate (see Tables 5 and 6).

Using the factor scores from mothers' prenatal testing to predict membership in the Excellent and Inadequate Care groups, the percent of correct classification was 73.8% ($p < =.0001$). The Psychological Complexity factor contributed most to the prediction of group membership. At 3 months the percent of correct classification was 74.2% ($p < =.0001$). The Hostile/Suspicious factor contributed most to the prediction of group membership at 3 months. When mothers' prenatal and 3-month factor scores were used to predict group membership for the Inadequate and Matched Care groups, the percent of correct classification dropped somewhat. Prenatally, the factor scores predicted group membership with 67.2% accuracy ($p = .006$), while at 3 months the correct classification rate was 60.9% ($p = .08$). In comparing the Inadequate and Matched groups, the Psychological Complexity factor declined in importance, leaving the Hostile/Suspicious and Negative Reaction to Pregnancy factors as the most important in predicting group membership (see Table 7).

Table 3

Discriminant Function Analyses
Prenatal Mother Variables, Excellent vs Inadequate

Analysis	% correct classification	X^2	signif.	Wilks Lambda	signif.	Standardized Disc. Function Coefficients	
Impulsiveness	64.6	5.55	.018	.806	.025	Aggression	.532
						Impulsivity	-.045
						Anxiety	.502
						Locus of Control	-.677
						Tension	.128
General Anxiety	69.2	9.615	.002	.840	.066	Defendence	-.204
						Anxiety	-.434
						Dependence	-.631
						Baby Fear	-.073
						Tension	-.350
Ego Level	81.3	25.0	.001	.576	.001	Shipley	-.543
						Succorance	-.637
						Anxiety	.429
						Locus of Control	.246
						Cohler II	-.476
						Dependence	.198
Maternal Expectations	76.9	18.84	.001	.612	.001	Broussard	.777
						Cohler I	.144
						Cohler II	.669
						Cohler III	-.189
						Desire for Preg.	-.132
						Maternal Feelings	.106
General Personality	66.2	6.79	.009	.800	.041	Defendence	-.112
						Impulsivity	-.042
						Anxiety	-.604
						Locus of Control	.548
						Dependence	-.460
						Tension	-.206

Table 4

Discriminant Function Analyses
3-Month Mother Variables, Excellent vs Inadequate

Analysis	% correct classification	X^2	signif.	Wilks Lambda	signif.	Standardized Disc. Function Coefficients	
Impulsiveness	72.3	12.938	.001	.697	.002	Aggression	.234
						Impulsivity	.074
						Anxiety	.788
						Locus of Control	-.626
						Tension	.271
General Anxiety	66.2	6.785	.009	.704	.006	Defendence	-.187
						Anxiety	-.465
						Self fear	.205
						Baby fear	-.480
						Dependence	-.436
						Tension	-.231
Ego Level Construct	83.3	26.67	.001	.601	.001	Succorance	-.549
						Anxiety	.745
						Locus of Control	-.387
						Cohler II	-.747
						Dependence	.318
Maternal Expectations	78.5	21.06	.001	.572	.001	Broussard	.594
						Cohler I	.378
						Cohler II	.833
						Cohler III	-.493
						Desire for Preg.	-.040
						Maternal Feelings	.123
General Personality	67.7	8.13	.004	.660	.001	Impulsivity	-.051
						Anxiety	-.780
						Locus of Control	.661
						Dependence	-.452
						Tension	-.270

Table 5

Discriminant Function Analyses
Prenatal Mother Variables, Inadequate vs Matched

Analysis	% correct classification	X^2	signif.	Wilks Lambda	signif.	Standardized Disc. Function Coefficients	
Impulsiveness	64.1	5.063	.021	.772	.011	Aggression	.329
						Impulsivity	-.189
						Anxiety	.621
						Locus of Control	-.995
						Tension	.106
General Anxiety	71.9	12.25	.0001	.864	.214	Defendence	-.112
						Anxiety	.791
						Dependence	.730
						Baby Fear	-.236
						Tension	-.224
						Self fear	.377
Ego Level Construct	79.7	22.56	.0001	.654	.000	Shipley	.042
						Succorance	-.787
						Anxiety	.801
						Locus of Control	-.631
						Cohler II	-.265
						Dependence	.499
Maternal Expections	62.57	4.0	.046	.938	.724	Broussard	.370
						Cohler I	-.117
						Cohler II	-.631
						Cohler III	.671
						Desire for Preg.	-.546
						Maternal Feelings	.242
General Personality	68.8	9.00	.003	.766	.009	Defendence	.097
						Anxiety	-.820
						Locus of Control	.821
						Dependence	-.460
						Tension	.164

Table 6

Discriminant Function Analyses
3-Month Mother Variables, Inadequate vs Matched

Analysis	% correct classification	X^2	signif.	Wilks Lambda	signif.	Standardized Disc. Function Coefficients	
Impulsiveness	62.5	4.00	.046	.842	.187	Aggression	.313
						Impulsivity	.309
						Anxiety	.374
						Locus of Control	-.590
						Tension	.258
General Anxiety	59.4	2.25	.134	.849	.212	Defendence	-.511
						Anxiety	-.373
						Self fear	.316
						Baby fear	-.485
						Dependence	-
						Tension	-.246
Ego Level Construct	67.2	7.56	.006	.774	.048	Succorance	-.600
						Anxiety	.766
						Locus of Control	-.640
						Cohler II	-.595
						Dependence	.132
Maternal Expectations	67.2	7.56	.006	.757	.063	Broussard	-.599
						Cohler I	-.392
						Cohler II	-.364
						Cohler III	.578
						Desire for Preg.	-.437
						Maternal Feelings	.328
General Personality	65.6	6.25	.012	.840	.179	Defendence	.341
						Impulsivity	.277
						Anxiety	.427
						Locus of Control	-.540
						Tension	.202

Table 7

Discriminant Function Analyses
Prenatal and 3-Month Mother Factor Scores
Excellent vs Inadequate and Matched vs Inadequate

Analysis	% correct classification	X^2	signif.	Wilks Lambda	signif.	Standardized Discriminant Function Coefficients	
Excellent vs Inadequate							
Mother Prenatal	73.8	14.785	.000	.71727	.000	Psychological Complexity	-.855
						Negative Reactions to Preg.	.413
						Impulsive/Anxious	.330
						Hostile/Suspicious	.253
Mother 3 Months	74.2	14.516	.000	.65989	.000	Hostile/Suspicious	.716
						Negative Reactions to Preg.	.531
						Low Desire for Motherhood	.452
						Psychological Complexity	-.367
						Impulsive/Anxious	.051
Matched vs Inadequate							
Mother Prenatal	67.2	7.563	.006	.9444	.489	Hostile/Suspicious	.691
						Negative Reactions to Preg.	.555
						Psychological Complexity	-.262
						Impulsive/Anxious	.257
Mother 3 Months	60.9	3.063	.08	.86114	.184	Hostile/Suspicious	.881
						Psychological Complexity	-.453
						Negative Reactions to Preg.	.450
						Dependence	.239
						Impulsive/Anxious	-.075

The results indicate that while traditional constructs such as Impulsivity did not differentiate groups, the variables which emphasized the integration of mothers' experience of pregnancy and child-rearing into her overall world view and personality organization were highly discriminating. A measure of maturity and self-concept which allows an understanding of both one's own and others' feelings were the kinds of integrative variables included in the personal integration construct. While some minimal level of intellectual functioning is clearly required to function in a personally integrative fashion, the concept is broader than intelligence. Emotional stability and experience are involved. This was best demonstrated by the discriminant function analysis using the Inadequate and Matched Care groups as the criterion. Even with the important variables of age, education, and marital status matched (presumably controlling for experience and support) the level of personal integration construct proved to be highly predictive. In fact it was only slightly less powerful than in the Excellent versus Inadequate Care group discrimination. Clearly the mothers in the Inadequate Care group are different in a critical way from others in very similar situations. Their inability to perceive and integrate their own feelings about themselves, about others and about the world around them seems to be salient.

Our data suggest that parental personality variables are important contributors to child abuse. While no means the only determinant of such disturbances, they bear further study and consideration for intervention.

Maternal Expectations and Child Abuse

It is the general impression of professionals who work with abusive parents that poor knowledge of child rearing and unrealistic expectations of normal development are often important determinants of abuse. It is frequently reported (Bain, 1963; Johnson & Morse, 1968; Morris & Gould, 1963; Steele & Pollack, 1968) that abusing parents have high expectations and demands regarding their child's performance coupled with a disregard for the child's own needs and limitations. Clinical lore holds that these factors are associated with certain personality characteristics in the parents. The great demands which abusive parents are said to place on their child are thought to stem from their own unmet affectional needs.

There have been few systematic investigations either of the general role of expectations in abuse or of the role of relevant parental characteristics as potential determinants of inappropriate expectations. Although there is some evidence (Berg, 1976) supporting the notion that parental needs and expectations are linked both to each other and to abuse, the retrospective design of the typical studies makes it impossible to determine whether or not inappropriate expectations on the part of parents precede or follow abusive treatment or their children. Furthermore, the fact that the parents

studied are usually in self-referred treatment means that they constitute a somewhat unique population. Unfortunately, the measures of expectations used across studies have also varied considerably. "Perceptions ", "knowledge", and "predictions" are used interchangeably with "expectations" despite obvious differences in the connotations of these terms.

We chose to view maternal expectations in our study as predictors of a child's behavior which are based upon many forms of data such as a mother's general knowledge, her feelings about her own childhood, her experiences with her present child, and so on. We see expectations resulting from how one perceives and interprets these factors, and ultimately how the individual generalizes from them. It was anticipated that we would find that faulty expectations (based on faulty perceptions, interpretations, and generalizations),rather than a lack of knowledge per se, would be related to abuse and neglect.

The measures included in our study allowed us to assess the expectations of our mothers in a number of ways and across a number of points in time. In our analyses we looked at consistencies across the expectation measures and at the relationships between these and our other findings. Four separate questions were raised:

1. Do mothers identified as providing either excellent or inadequate care for their children respond differentially to measures of expectations?

2. How do the various measures of expectations relate to one another?

3. How do variations in parental expectations relate to other personality and attitudinal variables?

Among measures included in our design, four provide direct information concerning maternal expectations. The Neonatal Perception Inventory (Broussard & Hartner, 1971) was administered to the mothers at the 36th week of pregnancy and again at 3 months post partum. On both occasions, the mothers were asked to rate their own child (hypothetically of course at the first testing) on a five-point scale for 6 items involving amount of crying, trouble with feeding, difficulty sleeping and so on. They were asked also to rate the average child on the identical items. Although in the past (Broussard & Hartner, 1971) difference scores ("my baby" minus "average baby") were used to predict outcome, we found that an average of the two scores ("my baby" and "the average baby") was more useful.

A 33-item questionnaire which we called Developmental Expectations Measure was also administred during the 36th week of pregnancy and repeated when the infant was 3 months old. This asks a mother to estimate the age at which the average child demonstrates certain cognitive, social, and motor behaviors. Because normative responses to the items do not

exist, we used the responses from our entire group of 267 mothers to generate scoring standards. Two variables were defined "early expectations" - the number of items for which a mother's estimate was at least one standard deviation below the sample mean, and "late expectations" - the number of times a mother's estimate was at least one standard deviation above the group mean.

As indicated earlier, the Bayley Scales of Infant Development (Bayley, 1969) were administered to the infants at 9 months. Immediately, prior to the actual testing each mother was asked to indicate whether or not she expected her infant would complete items like those included in the Bayley. We analyzed her responses in terms of the number of times she correctly predicted that her child would either pass or fail a particular item.

During the twelve-month interview, we asked two questions which pertained to parental expectations: "Is child rearing any more or less difficult than you expected?" and "What are your hopes for your baby?"

Results: Table 8 presents the data from the Neonatal Perception Inventory. As indicated, both at the prenatal and the 3-month period there were highly significant differences between the Excellent and Inadequate Care groups on the "my baby", "average baby" and summary scores. The women in the Excellent Care group expected greater ease in caring for their infants. The importance of the summary "my baby-average baby" scores was demonstrated by the results of the discriminate function analysis. In predicting group membership from the summary score and other maternal personality characteristics, the summary socre was one of the most important predictors.

The frequencies of "early" and "late" expectations given by the mothers in their responses to the Developmental Expectations Measure are provided in Table 9. It is clear from these results that mothers in the Inadequate Care group responded both early and late to significantly more items than did the mothers in the Excellent Care group.

There were no differences between the two groups in the number of correct anticipations concerning the child's performance on individual Bayley items. The mothers in the Excellent Care group had a mean score of 12.58 out of 19 (standard deviation = 2.8) while the mean for the Inadequate Care group was 12.25 (s.d. = 2.2). These scores are comparable to the overall performance of the sample (mean 11.7, range 0-17, s.d. = 2.7). These results indicate that both groups of mothers are quite good at predicting how well their child will perform on a variety of language, motor, and cognitive tasks.

The responses to the questions concerning parental expectations which were included in the 12-month interview revealed some interesting differences between the two care groups. The mothers in the Inadequate Care group, unlike those in the Excellent Care group, found parenting to be more difficult than expected. There were differences too in the

Table 8

Neonatal Perception Inventory: Means and SD's for Excellent and Inadequate Groups on Average Baby, My Baby and Mean Scores at Prenatal and 3-Month Testings.

Prenatal Variable	N	$\bar{X}$	S.D.	T	p
Average Baby					
Excellent Care Group	33	20.12	2.13	4.75	.000
Inadequate Care Group	32	17.25	2.7		
My Baby					
Excellent Care Group	33	21.39	2.23	4.63	.000
Inadequate Care Group	32	18.68	2.46		
*Mean					
Excellent Care Group	33	20.75	2.00	5.18	.000
Inadequate Care Group	32	17.96	2.31		
3-Month Variable					
Average Baby					
Excellent Care Group	33	21.03	2.25	5.24	.000
Inadequate Care Group	29	17.79	2.56		
My Baby					
Excellent Care Group	33	22.54	2.93	2.69	.007
Inadequate Care group	29	20.51	2.98		
*Mean					
Excellent Care Group	33	21.78	2.34	.452	.000
Inadequate Care Group	29	19.15	2.23		

* Mean = (Ave. Baby + My Baby)/ 2

Table 9

Development Expectations: Means and SD's for Excellent and Inadequate Care Groups on Early and Late Expectations' Variables at Prenatal and 3-Month Testings

Prenatal

Variable	N	$\bar{X}$	S.D.	p
Late Expectations				
Excellent Care Group	33	2.33	1.93	.002
Inadequate Care Group	32	5.16	4.54	
Early Expectations				
Excellent Care Group	33	.56	.92	.000
Inadequate Care Group	32	3.46	3.04	

3 Months

Variable	N	$\bar{X}$	S.D.	p
Late Expectations				
Excellent Care Group	33	3.39	2.52	.073
Inadequate Care Group	29	5.47	5.89	
Early Expectations				
Excellent Care Group	33	1.33	1.27	.004
Inadequate Care Group	29	2.75	2.37	

reasons the groups cited for their difficulties. While the women in the Inadequate Care group were generally naive or lacked knowledge with respect to expectations regarding their own child's characteristics, the Excellent Care group mothers attributed their difficulties to more specific caretaking duties.

While comparable numbers of women in each care group reported that mothering was less difficult than they had anticipated, the reasons they gave were quite different. The mothers in the Excellent Care group were more likely to attribute the ease of mothering to their own personal resources. The Inadequate Care mothers, on the other hand, credited their lack of difficulties to positive characteristics in their infants.

The question concerning hopes the mothers had regarding their babies' futures was also illuminating. Although the groups did not differ in terms of hoped for educational and occupational attainments, the Excellent Care women were much more likely to mention personal qualities or virtues which they hoped their children would possess. Several women in the Inadequate Care group seemed to fear that their child might grow up like their fathers (with a clear implication that this would be bad), and one of these mothers predicted a bad outcome - "he's going to be evil." None of the mothers in the Excellent Care group made such comments.

Although the "my baby" and "average baby" scores from the Neonatal Perception Inventory were highly correlated with each other, there were few significant correlations among our other expectation measures. This suggested as we had anticipated, that we were tapping different types of expectations and pointed to the difficulty of attempting to draw general conclusions from single measures.

In looking at the relationship between our expectation measures and maternal personality variables we found a general association between "early" and "late" expectations and overall sensitivity and psychological sophistication at both the prenatal and the 3-month periods. As one would have predicted, the women who made fewer "early" or "late" responses on the Developmental Expectations Measure were more sensitive and more aware of the psychological complexity of their relationship with their infant and of the maternal role than were their peers. In addition, a high number of "late" expectations in the prenatal period was associated with elevated dependence, anxiety, and defendence in the mothers. The pattern of results involving the Neonatal Perception Inventory was very similar. Women who expected child rearing to be difficult were less sensitive, less psychologically sophisticated, less intelligent, more fearful, and more anxious.

In summary, our results suggest that our four measures of maternal expectations met with varying degrees of success in tapping individual differences in our mothers. All but the Bayley predictions are able to

differentiate beteen the groups identified as Excellent or Inadequate care givers, but it is evident that they assess qualitatively different aspects of "maternal expectations". While general conclusions are difficult to draw, it does appear that the abuse prone mothers have a more inconsistent knowledge of child development and have more negative expectations regarding the ease of parenting in general coupled paradoxically with premature expectations concerning certain emotionally charged areas of functioning.

Paternal Personality and Attitude in Child Abuse

Lamb (1976) has called for detailed, descriptive work in the study of the general role that fathers play in development, and at this point, that call seems appropriate to the investigators of the role of fathers in child abuse as well. While it is clear that fathers have been explicit perpetrators as well as silent partners to abuse and neglect, little empirical information has appeared to date. Studies which have dealt with fathers as part of the abusive situation have not differentiated "the personalities and psychodynamics of abusing mothers and fathers". Rather, passivity and a tendency to unclear role definition in the household have stood out as the only clear characteristics ascribed to male abusers (Green, 1979). While we, like most others, have had considerable difficulty gathering data on fathers -- for example, 62% of the mothers in our study are single, there has been a high rate of disruption of marriages, many fathers feel little involvement with regard to the child, and many seem generally suspicious of any organization coming into their home to gather data -- we do have information on some of the fathers which was gathered prenatally and at three months. We enrolled 103 fathers for prenatal testing and 91 were tested again three months after the child's birth. Currently, our analyses have involved the 33 mothers in the Excellent Care group, the 32 mothers in the Inadequate Care group, 33 mothers matched for age, education, and marital status with mothers in the Inadequate group. From these criterion groups prenatal and 3-month data were available on 17 fathers from the Excellent Care group and 10 fathers from the Inadequate Care group.

Results: For all the fathers in the sample the variables were factor analyzed. Three prenatal factors emerged: Factor I, Adjustment Difficulties; Factor II, Psychological Complexity; Factor III, Lack of Parenthood Desire. Three-month factor analyses yielded five factors: Factor I, Adjustment Difficulties; Factor II, Psychological Complexity; Factor III, Lack of Parenthood Desire, Factor IV, Dependence; Factor V, Expectations. Considerable similarity of the data structure emerged from the two factor analyses.

Even though the Excellent and Inadequate Care groups were selected on the basis of the care provided by the mother, a number of differences were found between the fathers in the two care groups (see Tables 10 and 11). On the prenatal test scores, the fathers in the Excellent Care

Table 10

Significant Differences between Father Groups on 3-Month Variables and Factor Scores

Variable	Group 1 N = 14 Excellent Care Mean	S.D.	Group 2 N = 10 Inadequate Care Mean	S.D.	T	p
PRF Aggression	7.14	3.13	9.90	2.56	-2.29	.032
PRF Defendence	4.86	4.07	8.10	3.78	-1.98	.060
PRF Social Desirability	11.86	2.14	9.60	2.59	2.33	.029
IPAT Anxiety	27.64	9.56	38.80	7.13	-3.11	.005
Average baby	20.78	2.72	17.40	3.50	2.67	.014
My baby	23.38	2.37	18.30	5.16	3.24	.004
Maternal Attitude Scale: I Appropriate vs. inappropriate control of child's aggression	34.21	7.71	28.40	4.67	2.11	.046
II Encouragement vs. discouragement of reciprocity	41.07	6.19	31.70	11.45	2.59	.017
PRQ Baby Fear	14.00	2.48	16.90	4.48	-2.03	.054
Factor II - Psychological Complexity	.4998	.992	-.4759	.833	2.53	.019
Factor III - Lack of Parenthood Desire	-.4989	.595	.3616	1.326	-2.16	.042

Table 11

Significant Differences between Father Groups on Prenatal Variables and Factor Scores

Variable	Group 1 N = 17 Excellent Care Mean	S.D.	Group 2 N = 10 Inadequate Care Mean	S.D.	T	p
Shipley	30.12	4.79	24.00	6.70	2.76	.011
PRF Aggression	6.88	3.21	9.60	2.75	-2.23	.035
PRF Defendence	4.41	3.46	7.10	3.54	-1.93	.065
PRF Social Desirability	12.00	2.78	9.10	2.28	2.78	.010
IPAT Anxiety	23.58	10.38	38.50	12.12	-3.45	.002
Average baby	20.12	2.62	17.60	4.22	1.92	.066
My baby	21.62	3.77	18.10	4.50	2.15	.042
Maternal Attitude Scale:						
I Appropriate vs. inappropriate control of child's aggression	35.31	6.47	28.70	5.14	2.73	.012
II Encouragement vs. discouragement of reciprocity	41.19	7.04	29.30	10.51	3.46	.002
III Acceptance vs denial of emotional complexity of child care	38.56	5.40	31.50	8.25	2.65	.014
PRQ Maternal	9.75	1.48	11.20	1.55	-2.38	.025
Factor I - Adjustment Difficulties	-.2957	.865	.6237	.942	-2.58	.016
Factor II - Psychological Complexity	.5717	.519	-.4476	1.10	3.28	.003
Factor III - Lack of Parenthood Desire	-.3187	.596	.2088	.812	-1.94	.064

group had higher intelligence scores, and lower scores on the aggression, defendence, and social desirability scales of the PRF as compared to the fathers in the Inadequate Care group. The fathers in the Inadequate Care group had significantly higher anxiety scores, a lack of desire for parenthood and lower scores on the three scales from the Maternal Attitude Scale, as well as on the Neonatal Perception Inventory.

Essentially the same differences were found at three months, except for one Maternal Attitude Scale and the Adjustment Difficulties factor. The similarities of significant differences prenatally and at three months is particularly encouraging considering the reliability of the measures and the small sample size. This replication of the results gives us confidence in stating that the differences between the two father groups were highly reliable.

Based on these group differences data, it seems highly likely that the fathers are making important contributions to the abusive and neglectful situations identified in the Inadequate Care group. These fathers can be characterized as aggressive, suspicious, and lacking trust in others. They do not describe themselves in favorable terms in response to personality statements, thereby suggesting poor self-concept. Their low scores on the Adjustment Difficulties factor and their high anxiety score (89th percentile) suggest that the fathers in the Inadequate Care group may have psychological problems. The handbook for the IPAT Anxiety Scale Questionnaire (Cattell & Scheier, 1963) states that scores beyond the 85th percentile reflect social-emotional maladjustment and "a definite need of counseling and guidance for situational or characterological problems". The mothers in the Inadequate Care group had similarly high anxiety scores.

It seems that the fathers involved in the Inadequate Care families, like the mothers, are unable to understand and handle the naturally complex emotion involved in parenting. They have difficulty in viewing the child as autonomous, in developing true reciprocity, and in facing their own ambivalence towards having a baby. They expect their baby to be difficult to care for, they lack interest in being a parent, and they are fearful of being a parent.

The existence of such a clear pattern of results in this limited study indicates that the father, whether married to the mother or not, has a major impact on the mother-child situation and that any comprehensive intervention effort must involve the father. Unfortunately, just as many fathers who refused involvement in our study may refuse involvement in childcare issues. The fathers' fears and anxiety, lack of understanding of children, and relationship to children and other difficulties are similar to those experienced by the mothers. Any intervention efforts around these issues need to involve both parents.

CHAPTER IV

MOTHER-CHILD INTERACTION FACTORS AND MISTREATMENT

Bonding

One explanation of abuse and neglect which has gained popularity in recent years implicates "failure of bonding." This account may be seen as an outgrowth of the work of Klaus, Kennell, and colleagues (1972, 1974, 1976) who suggest that an initial failure to establish an appropriate bond between a woman and her newborn leads to disorders of mothering, the extreme form of which is abuse and neglect. Drawing on the theoretical work of Bowlby (1969), Klaus & Kennell (1976) define "attachment" as "a unique relationship between two people that is specific and endures through time." While the term "bonding" is never specifically defined, it seems to involve an early aspect of "attachment." Furthermore, it carries the implication that there is a sensitive (critical) period in the first few minutes or hours after birth during which close physical contact between the neonate and the parents is necessary if the appropriate "bond" is to be formed. The investigators believe that the contact in this immediate postpartum period is special in that the mother's contact during this time may alter her later behavior with her child during the first few years.

Unfortunately, studies (Fanaroff et al, 1972; Lynch & Roberts, 1977) which have attempted to demonstrate the role of "bonding failure" in the etiology of child abuse and neglect have been plagued with methodological problems and inadequate measures of bond formation. The typical strategy has been to study groups of children who, for medical reasons, had been separated from their mothers for unusually long periods during early infancy, the assumption being that such mother-infant pairs have had a limited opportunity to form a healthy bond and are consequently at risk for "bonding failure." The demonstration that such groups have increased rates of abuse and neglect is taken as evidence of such a failure.

In addition to the obvious circularity in the abuse argument, it is marred by the lack of any systematic attempt to assess the bonding process itself. Neither is there evidence that such potential bonding problems are the causes of later abuse and neglect. One might argue that it is not an attachment problem per se that is implicated in the etiology of the mothering disorder, but rather that certain maternal characteristics, present prior to the birth of her infant, affect both her ability to become bonded to the baby and her subsequent mothering. It is possible that such women were more irresponsible concerning prenatal care than were others and, as a result, were more likely to have premature or otherwise "at risk" infants. If this were indeed the case,

then the initial bonding failure is but an early symptom of the more pervasive problem rather than a cause of later mothering disorders.

Another plausible account for the over-representation of premature and unhealthy infants in abused and neglected populations is that such children are particularly difficult to care for, regardless of the level of skill of the caretakers. Such babies may be so frustrating that their mothers come to dislike them (and under certain circumstances abuse or neglect them).

It should be clear that our data do not provide definitive answers about the role of bonding failures in the etiology of abuse and neglect. Although our design did not include any direct assessment of the bonding process (and suffers on that count), it does have one significant advantage over the earlier work in that it was a prospective investigation. Given our wealth of data concerning the course of the pregnancy, labor and delivery, and early infancy period, as well as information on the quality of the later mother-child relationship, we chose to determine whether there were differences between the Excellent and Inadequate Care groups in the proportions of infants who had perinatal complications which resulted in unusual separations or lengths of stay in the hospital.

Results and Discussion: As discussed in the previous section of this report, we found no evidence of group differences in prematurity, delivery complications, or any medical problems which might require special care. There was a nonsignificant trend in the length of the hospital stay for both mothers and infants (not simply for infants after mothers had been discharged). There were three mothers in the Excellent Care and four in the Inadequate Care group who remained hospitalized for five or more days and for whom contact with their infants was very limited during the first two post-natal days.

Our data, though somewhat tentative, provide no evidence for the notion that prematurity, perinatal problems, or other indices of restricted early contact are implicated in the etiology of child abuse or neglect. Nor do they support conclusions from previous research that there is a sensitive period immediately following birth during which contact is necessary if a healthy bond is to be formed between a mother and her infant.

Despite the general lack of differences on these medically related variables for our groups, one rather interesting finding did emerge. Over one-third (14) of the Excellent Care mothers had volunteered to participate in the midwife program available at Hennepin County Medical Center where all of the infants were born. This was true for only one of the women in the Inadequate Care group. The midwife program provides extensive prenatal education and the opportunity for much physical contact between mother and child immediately after birth. In addition midwife-delivered infants room in with their mothers who are encouraged during that period to fondle their newborns and to attempt to engage them in eye-to-eye contact.

The relationship between good parenting and participation in the midwife program is consistent with the position that early extended mother-child contact enhances later mothering. However, we must point out that as a group the midwife patients in our sample were older, healthier, better educated, and more interested in their babies than the other women. Therefore, we cannot attribute the high quality of care they provided solely to their participation in the midwife program. It seems likely that participation in this program, like other indices used to infer bonding such as visiting patterns (Fanaroff et al, 1972), maternal behavior during her child's physical exam (Kennell et al, 1974), interview data (Klaus & Kennell, 1970), reflect in large part a mother's preexisting interest in her child. The major point to emphasize here, however, is that while we have little doubt that hospital procedures geared to making new mothers feel more comfortable and more competent must have a positive influence on the development of the mother-child relationship, it would be unwise to "blame" early separation for later abuse. We have no evidence to support the notion that early separation causes abuse, and furthermore it does a disservice to the millions of women and children who have developed perfectly healthy bonds under the current hospital regimen.

Attachment

While our design did not provide for any early measures of the adequacy of the mother-child bond, we did include an assessment of the quality of the affectional tie between the two at 12 and 18 months. These ages were selected because it seemed only reasonable to allow the mother and infant sufficient time to establish a smooth relationship before attempting to evaluate the bond between them. In addition, the paradigm most suited in terms of its rationale, reliability, and validity for making inferences about the affectional tie between caretaker and infant is Ainsworth and Wittig's (1969) Strange Situation Procedure which is geared toward the 12-month-old child. The theory behind the concept of attachment has been discussed at length by Ainsworth (1973) and Sroufe and Waters (1977). It will suffice here to say that we view attachment as reflected in the organization of behavior rather than as discrete behaviors. A child is considered to be securely attached not because he or she spends a lot (or a little) time in contact with the caretaker, or cries a lot (or a little), but because when distressed he or she actively and effectively seeks and maintains contact until comforted. When not distressed, however, such a child can part from the caretaker to explore the environment. The insecurely attached infant, on the other hand, may either be unable to use the caretaker as a source for comforting when distressed or as a source of support for exploration at other times.

In our investigation we have been interested in whether or not attachment classifications differed for the Excellent Care and Inadequate Care groups. Although the Ainsworth paradigm allows for a number of sub-categories, our data are presented here in terms of three classifications. Group B babies, the securely attached group, are those who, in their mother's presence, will explore a room and the contents and who, following a separation, use their mothers to reduce their distress. There are two distinct patterns of insecure attachment. Group A infants avoid contact with the mother following separation and ignore her attempts to initiate interaction. For this group, called Anxious-Avoidant, exploration appears to be ascendent over attachment, even when upset. Group C infants or the Anxious-Resistant group, on the other hand, resist interaction with the mother after a separation and do not appear to be comforted by her presence. Their exploration seems impoverished even before the mother leaves.

There was a high interrater agreement between the two coders who watched the videotapes of the Strange Situation Procedures (89% and 94% for the 12-month and 18-month data, respectively).

Results: As Table 12 indicates we found that at 12 months 75% of the Excellent Care group infants were B's, 16% A's and 9% C's. These figures correspond to 38% B's, 24% A;s and 38% C's in the Inadequate Care group. The data for the entire sample fell midway between these values: 56% B's, 22% A's and 22% C's. Compared with both the total sample and the Inadequate Care group, the Excellent Care group had a higher percentage of securely attached infants, slightly fewer A's, and significantly fewer C's. The Inadequate Care group had approximately the same percentage of A's as the total sample, fewer B's, and significantly more C's. Although it is unwise to draw any definite conclusions given the small number of cases involved, it is interesting to note that while the infants of abusive women were either A's or B's, the infants whose mothers neglected them tended to be classified as B's or C's.

The group differences observed at 18 months were not as great as those demonstrated at 1 year (see Table 13). There were 76% B's, 18% A's and 6% C's in the Excellent Care group, 56% B's, 33% A's and 11% C's in the Inadequate Care group, and 62% B's, 22% A's and 16% C's in the total sample. Interestingly, a very high percentage of the 24 neglected infants were classified as A's, and all 4 of the abused infants were seen as securely attached.

The stability of the classifications across the six-month period was poor for the Inadequate Care group with 48% shifting categories. The biggest change involved the 9 infants classified as C's at 12 months, 8 of whom were subsequently classified as A's or B's. Only 21 percent of the babies in the Excellent Care group changed categories over the six months and within that group, the B's seemed most stable.

Table 12

Percentage of infants in each attachment classification for the Inadequate and Excellent Care groups and total sample, 12 months

		Strange Situation Classifications		
	Number of Cases Not Classified	A	B	C
Excellent Care Group (N=33)	1	16	75	9
Inadequate Care Group (N=32)	3	24	38	38
Neglect (N=25)	3	14	36	50
Abuse (N=4)	0	50	50	0
Abuse & Neglect (N=3)	0	67	33	0
Total Sample (N=210)		22	56	22

Table 13

Percentage of infants in each attachment classification for the Excellent and Inadequate Care groups and total sample, 18 months

		Strange Situation Classifications		
	Number of Cases Not Classified	A	B	C
Excellent Care Group (N=33)	0	18	76	6
Inadequate Care Group Total (N=32)	5	33	56	11
Neglect (N=24)	5	37	47	16
Abuse (N=4)	0	0	100	0
Abuse & Neglect (N=4)	0	50	50	0
Total Sample (N=190)		22	62	16

Discussion: Our findings are supportive of the hardly surprising notion that the quality of care a child receives from his or her mother during the first year of life is reflected in the affectional tie between them at 12 months. Securely attached infants tended to come from homes where they received good care, while insecurely attached infants were more likely to have not been adequately cared for. We do not view an insecure attachment as the cause of abuse, as some authors have maintained, but rather as the result of a poor mother-child relationship which is itself symptomatic. The higher proportion of insecurely attached infants in the Inadequate Care group constitues further evidence of the adverse effects of abuse and neglect on the social and emotional development of a child.

Follow-up studies of abused and neglected children have typically found that they may suffer from physical and cognitive disabilities and show signs of deviant social and emotional development (Friedman & Morse, 1974; Martin, Beezley, Conway, and Kempe, 1974; Martin & Beezley, 1977). However, in one of the few investigations using matched comparions groups, the results did not support such differences (Elmer, 1977). She found no differences in neurological status, language development, self concept, psychological development, and a variety of other measures among abused, children who had been involved in accidents and an untraumatized matched comparison group. The majority of children showed disabilities in all areas tested. Elmer (1977) states that the similarity of findings for all the groups can be interpreted to mean that some common factor, namely poverty, is contributing to the children's widespread difficulties. The effects of poverty and related at-risk factors are clearly noted in our total sample, of which 44% of the children were insecurely attached at 12 months. When abuse, neglect and, in general, maltreatment of the child are added to the devastating effects of poverty, the number of insecurely attached infants increases even more.

While specific causal factors cannot be explained, our data do provide clues as to certain variables that account for insecure attachments. What is more puzzling, however, are the possible causal factors underlying the finding that 38% of the infants in the Inadequate Care group were classified as securely attached at 12 months, and an amazing 56% were so classified at 18 months. Despite having been consistently neglected and/or abused, these children demonstrated healthy attachments to their mothers. One can speculate on a variety of explanations.

In an attempt to explain the secure attachments within the Inadequate Care group, the mother's test scores, baby data, case history material, life events, and environmental information were examined. Following is a summary of the findings:

1) There was no relationship between the quality of attachment and severity of mistreatment. The securely attached infants in the Inadequate Care group were not any less severely mistreated compared to the insecurely attached. However, the age at which the mistreatment

occurred was associated with outcome. The earlier the abuse and neglect, the greater the likelihood of an insecure attachment.

2) In a number of cases, the presence of grandmother or other family members who provided emotional support and caretaking assistance to the mother seemed to be important. From the highly subjective analysis of case histories, it appears that the most important factors accounting for the secure attachments among the Inadequate Care group is the support provided by the grandmother or other family members.

3) In a few cases, the secure infants in the Inadequate Care group were described as especially "warm, cuddly, affectionate, and appealing." They scored high on the Brazelton orientation items, suggesting that they were very responsive to social cues. They were also high on physical development, motor maturity, and consolability, and low on irritability. It appears that these infants were able to elicit and maintain positive interaction despite their mothers' poor parenting skills.

4) There were no differences between mothers of secure and insecure infants in the Inadequate Care group on measures of personality, knowledge of caretaking and child development, expectations, anxiety, and locus of control, nor were there differences on the feeding and play variables.

5) Finally, any attempt to account for non-predicted attachment classifications must consider the reliability of the technique to assess attachment. It is possible that some of the securely attached infants in the inadequate care group were misclassified.

Observational Data on Mother-Child Interaction During Feeding and Play Situations

The 24 mother and child variables assessed during feeding at 3 and 6 months and the 12 variables assessed during a play situation at 6 months were subjected to a principal axes factor analysis with varimax rotation. The 3-month feeding observations yielded 4 significant factors: Mother's Caretaking Skills, Mother's Affective Behavior, Baby's Social Behavior and Muscle Tone/Cuddling. With the exception of the latter factor (which did not emerge) the pattern was essentially the same for the 6-month feeding observation. Variables coded during the play situation also produced four factors: Mother's Support and Cooperation, Baby's Activity and Coordination, Amount of Reciprocal Play, and Baby's Satisfaction. These factors were then included in discriminant function analyses with the Inadequate and Excellent Care groups as the criterion samples.

As can be seen from the results presented in Table 14, there is clear evidence that deviant patterns of mother-child interaction at 3 and 6 months were highly predictive of later maltreatment. The

prediction based on 3-month feeding factor scores was 85.8% correct classification ($p = .0001$) for the Excellent and Inadequate Care groups. Using 6-month feeding and play factor scores, the percent of correct classification was 78.0 ($p = .001$). Mother's caretaking skills, support and cooperation, and emotional responsiveness along with baby's social behavior all contributed to the prediction of membership in the Excellent and Inadequate Care groups.

The prediction of membership in the Inadequate and Matched Care groups using the 3-month feeding factor scores was 59.4% correct classification ($p = .134$). Patterns of interaction were not useful in predicting membership for the Matched Care group: 53.1% of this group was correctly classified and 65.6% of the Inadequate Care group was correctly classified. Combining the 6-month feeding and play factor scores, the percent of overall correct classification was 65.6%. Similar to the 3-month feeding data, only 56.3% of the Matched Care group was correctly classified. Surprisingly, the variable best predicting group membership was baby's social behavior observed during feeding.

Our findings point to the importance of a good reciprocal relationship between mother and child. In the feeding and play situations, the Inadequate Care mothers were often insensitive to their child's cues. While the Excellent Care group women geared the timing and style of the feeding to the baby's state, the Inadequate Care mothers paid little attention to the baby's needs and interests and often interferred with the baby's activities. Feeding was something this latter group did <u>to</u> their infants, and they did it in a mechanical way which precluded any reciprocity - even when the babies tried to engage them in social interaction.

In order to determine the relative importance of the feeding factors compared to mother, baby and life stress factors, discriminant function analyses were run using various combinations of scores. The percent of correct classification from various combinations of scores to predict membership in the Inadequate and Excellent Care groups was 80-90%. When the same variables were used to predict membership in the Inadequate and Matched Care group, correct classifications were all in the 80 percent range. In every instance group membership was best predicted by the feeding factors compared to the other variables. This suggests once again that measures taken from an interactive situation where mother's response is influenced by the baby's preceding behavior are the most useful in discriminating mother groups.

Table 14
Discriminant Function Analyses:
Three and Six Month Feeding and Play
Inadequate and Excellent Care Groups

Analysis	%Correct Classification	X^2	signif.	Wilks Lambda	signif.	Standardized Disc. Function Coefficients	
Feeding Factors 3 months	85.5	31.226	.000	.44812	.000	Mother Caretaking Skills	-1.17622
						Mother's Affective Behavior	- .56272
						Baby's Social Behavior	- .51420
Feeding and Play 6 months	78.0	18.458	.001		.001	Mother Caretaking Skills	- .75025
						Baby's Social Behavior	- .50306
						Mother's Support and Cooperation	- .42798
						Baby's Activity and Coordination	.42798
						Mother's Affective Behavior	- .27654
			Inadequate and Matched Care Groups				
Feeding Factor 3 months	59.4	2.25	.134	.84151	.036	Mother Caretaking Skills	- .07547
						Mother's Affective Behavior	.77341
						Baby's Social Behavior	- .37442
Feeding and Play 6 months	65.6	6.25	.012	.67768	.005	Baby's Social Behavior	1.13493
						Mother Caretaking Skills	.56864
						Baby's Activity and Coordination	.33495
						Mother's Affective Behavior	.26319
						Mother's Support and Cooperation	.09644
						Amount of Reciprocal Play	.07576

CHAPTER V

LIFE STRESS AND CHILD MISTREATMENT

Recently there has been an increasing emphasis on the roles of culture, social forces, and socio-environmental stress in the etiology of child abuse and neglect (Garbarino, 1976; Giovannoni, 1971). When adversive societal conditions such as poverty and limited community resources occur in conjunction with societal norms condoning physical force in child discipline, increases in child abuse often result. Until recently investigators looking at the relationship between stress and abuse reviewed case histories, hospital records, or interviewed abusers and concluded that abuse occurs primarily in a low SES population. This finding is inconsistent, however, with studies that indicate that it occurs in a wide variety of economic and community settings (Blumberg, 1976; Steele & Pollack, 1968). Abuse and neglect are not exclusively lower class phenomena nor do all low SES parents abuse their children. Even though it may be true that child-abusing families are experiencing a great deal of stress, it is clear that not every family undergoing an equal amount of stress abuses or neglects their children. Obviously poverty and environmental stress alone are not sufficient explanations for the occurrence of abuse and neglect. To understand the relation between poverty and abuse, it is necessary to describe clearly the stresses experienced by the family and to examine specific parental, child, and environmental characteristics that may mediate between stresses and the quality of care the child receives.

More recently investigators have attempted to identify more specific environmental stresses by administering a life stress scale such as Holmes and Rahe's (1967) Schedule of Recent Events, a 43-item inventory of recent situational events. The problem with this and similar scales is that they most likely do not provide accurate measures of stress for lower class populations. Items such as taking out a mortgage or major business readjustments (Holmes & Rahe, 1967, p. 214) seem irrelevant to the low SES families used in many child abuse studies, many of whom can barely meet rental costs.

For our research, we revised the Cochrane and Robertson (1973) Life Event Inventory, which is a modified version of the Holmes and Rahe Schedule of Recent Events. Cochrane and Robertson (1973) attempted to correct some of the problems with the Schedule of Recent Events by eliminating many of the items that were trivial (e.g. Christmas), appropriate for only a small number of people (e.g., major business readjustment), or ambiguous (e.g., change in financial status). The final version of the Life Event Inventory consisted of 18 items from the Schedule of Recent Events and 37 new items. Our version of the scale consisted of 44 items, 38 of which were from the Cochrane and Robertson scale.

In looking at the results of analyses using the life event data obtained three months after delivery, we did not find differences in the amount of stressful events experienced by the Excellent and Inadequate Care groups (Egeland & Brunnquell, 1979). It became apparent that even though there was no difference in the total number of life event items checked by the two groups, there was a difference in the severity of the experienced stressful life event. Each item on our original life event scale and similar scales used by other investigators could actually refer to a range of events encompassing different degrees of disruption. A variety of incidents which could be classified as an event were treated as equivalent. For one mother a given item may represent a minimal amount of disruption and readjustment, whereas for another mother endorsement of the same item may represent a tremendous amount of disruption and readjustment. For example, "sickness of a family member" includes a variety of illnesses which vary tremendously in the degree of severity. A terminal illness creates more disruption for the mother than an acute illness where the chances of recovery are almost certain. Even though the meaning of the two events varies tremendously, each would receive an equal score for that particular item according to the standard procedures. While investigators have attempted to use different scoring procedures with their life event scales, none of the systems have attempted to deal with the varying degrees of disruption involved in the endorsement of a particular item.

We attempted to correct this problem by obtaining more information regarding a particular stressful event and scoring each event on a 3-point scale, depending on the degree of disruption involved (Egeland, Breitenbucher, Dodds, Pastor & Rosenberg, 1978). For example, the item "sickness of a family member," is given a score of 0 if it is not serious or if it occurred in a family member upon whom the mother is not dependent. A terminal illness of a family member upon whom the mother is dependent is given a score of 3.

The new scoring system was applied to the life event data obtained at 12 months. This data was used to look at differences between the Inadequate and Excellent Care groups. We also looked at the importance of life events in relation to other variables such as mother characteristics, infant behavior, and mother-infant interaction variables. Since not all stressed persons abuse their children, a major question examined was why do some stressed mothers abuse and neglect their children while others, experiencing more changing life events, do not. By looking at a variety of different variables we attempted to identify the precipitating factors that differentiate mothers under stress who abuse and neglect their children from those who do not.

Results

The mean weighted life stress scores obtained at 12 months were 6.03 for the Adequate Care group, 10.59 for the Inadequate Care group and 8.00 for the total sample. Even though these differences are highly significant, a large porportion of the mothers in the Inadequate Care group did not obtain life stress scores in the upper part of the distribution. A total of 51 mothers received a life events score of 11 or more (approximately the upper 20th percentile); however, only 12 of the 51 were in the Inadequate Care group.

The central question is what distinguishes the mother with a high life events score who does not mistreat her child (HS-AC) from the mother with a similar score who does mistreat her child (HS-NC). A summary of the findings are as follows: 1) There was no difference between the HS-NC and HS-AC groups on the type of life event experienced. Even when related items such as those having to do with work, financial problems, etc. were combined, there were no significant differences between the two groups. 2) On the maternal personality characteristics obtained when the infant was three months of age, the HS-NC mothers scored higher on the aggression and defendence scales and lower on the succorance and social desirability scale than HS-AC group. This means that the HS-NC mothers are more aggressive, defensive, and suspicious, less open and seeking of support, and they present a less favorable picture of themselves in response to personality statements. 3) The HS-NC mothers obtained a significantly higher score on the anxiety measure. Despite the fact that both groups experienced tremendous numbers of changing life events, the HS-NC mothers perceived themselves as more anxious. 4) A difference was found on the "appropriateness of mother's attitude toward the child's aggression scale" of the Maternal Attitude Scale. The HS-AC mothers were more aware of difficulties and demands involved in being a parent and were able to accept in an appropriate manner ambivalent feelings which accompany healthy mothering. 5) There were large differences between the two groups on the quality of mother-infant interaction measures. At three and six months the HS-AC group displayed better caretaking skills and were more emotionally responsive to the infant. The social responsiveness of the infant approached significance at six months for both feeding and play.

To test the relative importance of changing life events compared to other mother, infant and interactional variables in discriminating between the Inadequate and Adequate Care groups, a discriminant function analysis was used. The variables used to discriminate the two groups were entered in the following order: Play Factor I; Life Stress; Feeding Factor I; Brazelton Nonoptimal Score; Mother's Psychological Complexity Factor; Feeding Factor II; Feeding Factor III; and Play Factor II. This solution achieved a 92% correct classification rate. These results clearly indicate that life stress makes a significant contribution to predicting membership in the Adequate and Inadequate Care groups.

Discussion

The highly significant differences in life event scores between mothers providing adequate care and those providing inadequate care supports the notion that environmental stress is an important factor in the etiology of child abuse and neglect. However, the finding that not all of the mothers in the inadequate care group were experiencing changing life events makes it very clear that there are multiple causes of abuse and neglect, and that stress is only one part of this explanation. The discriminant function analysis clearly indicates that prediction of group membership can be greatly improved by including mother-infant interaction data, information on infant characteristics, and scores on a measure of mother's understanding of the psychological complexity of the relationship with her child. The concept of life event is an important variable in understanding abuse, but the present results indicate that it is not a major variable.

In order to understand the relationship between life events and mistreatment, we looked at the variables that differentiated the high stress mothers who mistreat their children (HS-NC) from a similar high stress group that did not mistreat their children (HS-AC). A high life events score in combination with certain mother characteristics, baby behavior, and patterns of interaction appear to increase the likelihood that abuse will occur, whereas a different combination of characteristics and interaction patterns reduce the likelihood.

In addition to the personality differences we found between the two groups, the HS-AC have more support from other family members and friends, and they are better at seeking out support and help in time of difficulty. The differences on the defendence scale indicate that HS-NC mothers are more suspicious, defensive, and rigid, which makes it more difficult to maintain relationships and seek help from others. Their low scores on the succorance scale suggests further that they may have difficulty trusting and confiding in other people and they do not seek sympathy, advice, and reassurance from others. It seems likely that the mothers with the high life events scores who mistreat their children are likely to respond to changing life events in a hostile fashion, rather than attempting to cope with the situation and seeking out support and help of others. A hostile response may increase the number of disruptive events in the individual's life, which in turn increases the mistrust of the help and support of others. Certainly breaking this cycle is critical for any intervention program.

Two other differences were found that may help explain why some high-stress mothers mistreat their children and others, under similar stress, do not. The differences were mother's anxiety level and mother's competence, in terms of both her caretaking skills observed in feeding and play situations and her sensitivity and understanding of the complexity of the mother-infant relationship. The mean anxiety score for the HS-NC mothers was beyond the 90th percentile. The test authors point out that when anxiety reaches this level, there is

definite psychological morbidity, which is almost certain to have adverse effects on work and sound emotional adjustment. The high anxiety level of the HS-NC group would most likely greatly interfere with their ability to adjust and cope with all but the most routine life situations.

The higher scores on the Maternal Attitude Scale for the HS-AC mothers suggest that these mothers are more adept at caring for their infants, in terms of their awareness of the difficulties and demands of being a parent, and are able to accept in an appropriate manner the ambivalent feelings which accompany healthy mothering. The HS-AC mothers are better at recognizing the need to foster a close dependent relationship, but, on the other hand, they are able to encourage the development of independence and autonomous functioning. The mother is able to encourage this close relationship but still see both herself and her infant as separate, autonomous individuals.

Mother's ability to see herself as completely separate from her infant seems to be an important factor in her ability to deal with stressful situations. When a mother who doesn't seem to have a clear idea of the boundaries between herself and others and particularly her child, experiences a stressful event, she cannot isolate the stress of the event. It "permeates" all aspects of her functioning and affects responsiveness, empathy, and her ability to provide routine care for her child. The concept of ego boundaries appears to be important in understanding how the mother copes with stressful situations and how stress affects her relationship with others. The mother who does not see herself as separate from her infant would appear to have difficulty adjusting to changing life situations without the stress and frustration directly affecting the infant.

CHAPTER VI

IMPLICATIONS AND CONCLUSIONS

Incidence

Many of the findings reported in the first section of this paper involved our attempt to identify variables which differentiated highly competent mothers from women who seriously mistreated their children. Not until the study had been underway for many months did we become aware of the remarkable (and very alarming) fact that we had such a large group of abusing and neglecting mothers to study. It may well be that the single most significant datum generated by our investigation is the high degree of abuse and neglect which we uncovered.

The incidence figures for abuse and neglect show great variability. In part this is due to differences in the sources of the estimates, especially in terms of discrepancies in state laws concerning what constitutes report-mandated mistreatment. But probably more significant than the variations in child abuse statutes or in administrative procedures for reporting suspected cases is the fact that all of the systems for detecting mistreatment are highly unreliable.

The most typically quoted figures predict that almost one child in 100 is a candidate for abuse (Nagi, 1976). This is a mid-range estimate and is based on data from a variety of sources gained in a variety of manners. It is important to note here that the upper limit figures used in the calculations have come from jurisdictions where either there are strict laws regarding the reporting of abuse and neglect or there has been a public campaign to raise the level of consciousness about the mistreatment of children. In Florida, for example, the number of reported cases of abuse and neglect jumped from 17 in 1970 to 19,120 in 1971 following the adoption of a new statute, the installation of a toll-free reporting line and a public information campaign. Over the next three years the annual rate leveled off at approximately 30,000 suspected cases. It would be clearly irrational to interpret this dramatic increase in reported cases of abuse and neglect as evidence of a change in the actual number of seriously mistreated children. Instead it should be seen as proof that the extent of abuse and neglect detected depends heavily on how closely one looks.

Most researchers have done little more than summarize the after-the-fact occurrences of mistreatment that have been brought to the attention of public agencies. It was such a post hoc estimate that we relied on in choosing the Minneapolis Public Health Clinics as our source for an at-risk sample. Much to our amazement, we found that from our initial sample of 267 mother-infant pairs, 32 children had been abused or neglected within the first two years of their lives. By going into the homes of these at-risk families and becoming involved in their lives, we detected violence and neglect to degrees previously

unimagined. On the basis of our contact, we can generate an incidence figure of almost 12 percent for this population. (It should be pointed out that this is a true estimate of incidence unlike the prevalence indicators usually cited.)

This finding highlights the value of a prospective approach. More importantly, however, it reveals the unfortunate fact that large numbers of abused and neglected children never come to the attention of social agencies or other authorities. Nevertheless, the psychological effects of this undocumented mistreatment are as likely to be detrimental to their development and adjustment as are the effects of the broken bones or life-endangering conditions that bring abused children into the hospital. In some respects, the abused and neglected child who becomes part of the statistic, and as a result receives Child Protection services, may be better off than the boy or girl who escapes detection but may be as severely mistreated. This latter group never receives the needed protection and their families go untreated.

If we have identified 32 abused and neglected children by age two, what will the incidence figure be by the time these children are adolescents? Our thinking is that there will be very few newly identified abuse and neglect cases. We would argue that the majority of the cases in the population in general have been abused and neglected from birth even though they may not come to the attention of any social agency until the child is older. Our incidence figures are high because we know the families very well and consequently have observed the mistreatment from an early age. Many of the children in our Inadequate Care group have been referred to Child Protection--many more will be referred as they get older. Many of our mothers are in a "gray" area and it literally takes one incident to put them over the "line" into the abuse range. The effects of the mistreatment from mothers in the "gray" area are most likely as devastating to the development of the child as the effects of actual abuse or neglect. It is clear that intervention is needed for both groups.

We need to point out that in our sample there most likely will be a few cases of abuse and neglect occurring at a later age. We feel that these cases will be somewhat different from what we have characterized at an earlier age. It is anticipated that stress and life circumstances will play a more important role at later ages. In a few instances the mother's need to readjust to the child's changing developmental status may increase the likelihood of abuse. For example, a mother may get along very well with her infant since she is able to cope with the infant's dependency, but as the child becomes increasingly independent she has difficulty getting along with the child.

The fact that we uncovered such a large number of cases of child abuse and neglect has important implications both for etiological theories of the phenomena and for strategies for intervention and prevention. In the following sections we will attempt to characterize the situation in which mistreatment occurred and briefly discuss the implications for intervention.

An "Editorial"

Before we attempt to characterize the situation in which mistreatment occurred in our sample, we would like to present a brief "editorial" on the need for more research and evaluation in the area of abuse and neglect. With the recent public awareness and concern for the problems of abuse and neglect there has been a tremendous demand for an exploration of the phenomena and immediate action to eliminate them from society. Minus adequate knowledge, theories of abuse and neglect have arisen based on subjective opinions and anecdotal evidence. Similarly, prevention and intervention programs have been implemented without any empirical support for success of the strategies employed. Our "knowledge" has consisted primarily of the opinions of the experts. Many of these opinions have been adhered to more for emotional than for intellectual reasons and it would appear that some of the popular beliefs about abuse and neglect have had a negative effect on the field. Some of the practices, such as those involving screening, removal of the child from the home, incarceration, labeling, etc., continue in unquestioned widespread use in spite of some destructive effects on children and families. Decisions to intervene in the lives of abusive and neglectful families have far reaching consequences for the futures of those individuals. The significance of these decisions is such that we cannot rely on subjective opinions and beliefs as our knowledge base. Obviously, intervention and prevention must go on but existing programs must be evaluated and revised and new programs need to be developed on the basis of a systematic program of research. The problems of abuse and neglect are much too serious for us to continue to formulate policy and to develop programs without a sound knowledge base. We need to admit that we do not have the answers and that the problem will certainly continue unless more effective prevention and intervention programs are developed. This can only be done by making a commitment to rigorous research and evaluation efforts.

Our research must be problem oriented and it needs to incorporate findings and theory from a variety of disciplines. We must not hold a narrow view of the area of child abuse, rather, the problem needs to be considered from the broad perspective of child rearing in general. Child rearing consists of a continuum and we need to identify environmental, parental, child and interactional factors that affect caretaking and determine the differential effects of these factors at various points of this continuum. What are the factors leading to poor quality care and what factors are associated with good quality care?

In addition to the need for more quality research, we strongly recommend that individuals involved in intervention use research findings as the basis for the development of intervention programs. We would like to see a project(s) where someone experienced in intervention reviews and synthesizes the research in child abuse and related areas and based on these findings develops new approaches and strategies for intervention.

Characterization of the Abusive and Neglectful Situation

The picture of the mother who mistreates her child is relatively clear. A few years back it was believed that abusers were psychotic or neurotic and that abuse was the direct result of emotional illness (Wooley & Evans, 1955). More recently the emphasis in causal accounts has shifted to enduring character traits such as impulsivity (Kempe, et al., 1962). Our data and those of others (e.g., Gaines, Sandgrund, Green & Power, 1978) indicate that information on personality characteristics alone contributes relatively little to understanding abuse. What seems to be important is the mother's ability to integrate the experiences of pregnancy and child rearing into her overall level and mode of functioning. The Excellent Care mothers were aware of the difficulties and demands involved in being a parent and were able to accept the ambivalent feelings which accompany caretaking. Realizing that infants are capable of establishing a relationship, they were sensitive to the meaning of the child's behavior. In a very general sense what we are talking about is psychological maturity which obviously is closely tied to age, education and experience.

A mother who lacks the skills described above will not necessarily mistreat her child. Rather, an inability to personally integrate experiences and a negative reaction to pregnancy along with a high anxiety level and hostile and suspicious nature greatly increases the risk of abuse taking place. For some mothers there was a specific increase in the amount of hostility, suspiciousness and anxiety between the prenatal and three-month testing, which appeared to reflect the difficulty the baby presented for them following birth. These women responded to their mounting anxiety by becoming hostile and suspicious, which interfered with their ability to be good mothers. While hostility and suspiciousness do not directly "cause" abuse, they do interfere with a mother's ability to cope with her anxiety in a constructive way. All of this makes it difficult for her to establish a smooth relationship with her infant.

In addition, the kind of pattern described above makes it difficult for the new mother to solicit help from her family and friends. One characteristic of abusing families that we and others have observed is their social isolation and lack of support. It appeared to us that the mother's hostility and suspiciousness prevented her from seeking help and it adversely affected her ability to relate to others. In summary, when a young mother who has a poor understanding of her baby and her relationship to her baby shows an increase in anxiety after delivery and responds in a hostile and suspicious fashion, she should be considered high risk for abuse and given special attention.

Our analyses also suggested that maternal expectations contributed to the probability of abuse and neglect. Despite the fact that our different measures of expectations were relatively independent of one another, each (except expectation of performance on the Bayley) did differentiate the Excellent and Inadequate Care groups. It is our position that expectations are not a separate entity which "cause"

(or "prevent") abuse but are instead one aspect of the broader construct we called personal integration. The strong relationships which were demonstrated to exist between the expectations measures and our psychological complexity factor and personal integration construct lead us to believe that realistic expectations are but part of the emotionally mature, well-integrated personality. In order to understand and act appropriately upon her relationship with her child, a mother must first understand both her own needs and those of the child (i.e., have realistic expectations). The implications of these conclusions are important for professionals interested in intervention. While direct attempts to modify mothers' unrealistic expectations may be a significant first step towards improving potentially explosive situations, in the long run such efforts alone may have little effect on the quality of care at-risk children receive since the broader "causes" remain untreated.

To further complete the picture of the abusive situation, it is necessary to consider how an infant may influence the quality of care he/she receives. While gross variables such as prematurity and birth weight were shown to be irrelevant in our study, the results did suggest that there are certain infant characteristics that increase the probability that abuse, neglect and other forms of mistreatment will occur. Irritability, lack of motor maturity and poor orientation skills (as assessed by the Brazelton) were shown to be related to mistreatment, particularly when they occurred in a situation where the mother was young, lacked knowledge and understanding and displayed other characteristics described above. All of these factors interfere with the establishment of a smooth mother and infant relationship. A good mother realizes that irritable behavior is one way the baby communicates his/her needs and discomfort. Too often a mother will interpret this behavior as being due to a "bad baby" or her inability to adequately care for her child. The mother who has a baby that displayed these characteristics and who does not understand a baby's needs and capabilities, particularly a baby's capacity to respond and interact, will most likely not be able to establish a smooth, close relationship with the infant and, as a result, the probability of mistreatment increases. It seems reasonable to us that the infant's orientation skills were important because of the simple fact that the baby who can orient easily to a human face or voice is one who appears interested in social relationships. It was the case that an infant who was not irritable and who oriented easily was less vulnerable to mistreatment even if the mother was young, under stress and generally incompetent. If, on the other hand, a mother is insensitive to her infant's cues to begin with and the baby does not attend to the stimulation she does provide, it becomes increasingly likely that the mother will misinterpret the infant's behavior and lose interest in establishing a relationship. As a result, the probability of mistreatment is heightened. Thus, in many instances, the baby contributes to the quality of care he/she receives both in terms of greatly increasing the probability of abuse in some situations and in other situations greatly reducing the likelihood of abuse.

It is somewhat surprising,considering the instability between days 7 and 10, that the Brazelton scale relates to later quality of care. Even though we found these relationships with a large group of mothers, it must be stressed that the Brazelton scale is not appropriate for clinical use, particularly for screening and predicting abuse. This is also true for the ratings done in the newborn nursery and for the ratings by the mothers of infant temperament. We wish to emphasize as well that these baby variables should not be considered in isolation. There is no direct linear relationship between certain baby behaviors and abuse. It is only in combination with other variables that they serve to make a child more or less vulnerable for mistreatment.

The interaction between baby characteristics and the characteristics and behavior of the caretaker is most clearly observed in the feeding and play situations. Of all the variables studied, the deviant patterns of interaction observed during these situations wherein the mother's response was influenced by the baby's preceding behavior, were the best predictors of maltreatment. Although there were a number of variables measured in the feeding and play situations, we will limit our discussion to only these two--cooperation/interference and sensitivity/insensitivity--which potentially have implications both for understanding abuse and for developing programs of intervention.

The central issue in the cooperation dimension is the extent to which mother's activities break into her infant's ongoing activity. An interfering mother is inconsiderate of her baby's wishes and activites and she appears to have no respect for her baby as an autonomous person. The interfering mother tries to direct and control her baby's behavior rather than gearing her interventions to the baby's state, mood and interests. In feeding, the cooperative mother offers food but never forces it. She treats the meal as a social event rather than a conflict. She is responsive to her baby's social bids and vocalizations. Consequently, feeding goes smoothly and most likely it is a positive social experience for the baby. During play, the cooperative mother does not act upon the baby; instead, the baby's activities are co-determined.

The sensitive mother is able to perceive and interpret her baby's cues, wishes and signals. She can judge the meaning of the infant's behavior and how her own behavior affects the child. One obvious example of this is the situation in which a mother will punish a child for a particular behavior such as crying, and be insensitive to the fact that her action is not having the desired effect. If the baby continues to cry in response to the punishment and the mother increases her punishment in response to the crying, the situation becomes potentially explosive. For a number of mothers who mistreated their children, it was observed that they were insensitive to the impact their behavior had on the child. That insensitivity made it impossible for the pair to establish a smooth working relationship. In our view, insensitivity and interference is probably a manifestation of the mother's lack of understanding of the psychological complexities inherent in any

mother-infant relationship. It is an example of the mother's failure to personally integrate as discussed above. These difficulties, particularly her insensitivity and interference, appear to us to be major elements for consideration in the development of any intervention program.

It is our opinion that life stress was not the most important variable in instances of abuse and neglect since many high stress mothers did not mistreat their children and many abusers were not experiencing large amounts of life stress. Life stress is obviously important but, like many of the other variables studied, the role of stress in abuse is complicated. It appears that life stress will most likely have a negative effect on the quality of care a child receives if the mother has a high anxiety level, is hostile, suspicious, defensive and rigid, lacks the support of family, and does not have the skills to care for and understand her infant. Young, immature mothers seem to have greater difficulty in dealing with stress. For this group the concept of "ego boundaries" appears to be particularly relevant in understanding the relationship between stressful experiences and the quality of care she provides. A woman who does not have a clear idea of the boundaries between herself and others, particularly her child, will have difficulty dealing with stress because she cannot isolate the stress of the event. The stress associated with an event may "permeate" all aspects of her functioning and thus interfere with her ability to cope and to relate to others. It appears that such mothers often cannot isolate the source of a stress in their lives. Instead, the stress generalizes to all of their activities, particularly those involved in caretaking.

In conclusion, poverty and the chaos and disruption surrounding it affect the mother's relationship with her child and ultimately the development of the child. Any major efforts directed toward intervention and prevention of abuse must begin with an effort to eliminate poverty. This constitutes intervention on a societal level. On an individual basis the mother's anxiety level is perhaps the relevant dimension to consider in planning intervention programs. In almost every instance where a mother was having difficulty caring for her child, her anxiety level was very high. We know, based upon the large amount of research on the topic, that high anxiety interferes with one's ability to cope and to learn new skills. It could distort a mother's perceptions of her infant and her relationship with her infant, thus interfering with the development of close emotional ties. Furthermore, the rigidity and defensiveness associated with high anxiety would most likely make a mother more resistant to learning new techniques of caretaking and of coping in general. All of this argues for an intervention program that has as one of its basic tenets the reduction of the mother's anxiety. Without reducing this tension she will have extreme difficulty establishing a close relationship with her infant, perceiving the situation accurately, interpreting the infant's wishes and cues and learning how to adequately care for her child.

Intervention

Our data concerning the construct we call personal integration have implications of value for professionals interested in intervention and prevention programs. It is not enough simply to provide information or skills training or to offer psychotherapy aimed at specific behavioral patterns such as impulsivity. Instead, there must be a more broadly therapeutic objective: The mother-to-be must learn to recognize her own feelings and needs as well as those of others and to integrate all of these into her personal life and the world around her.

More specifically, intervention should focus on the mother's (and when possible a father's) reactions, feelings and perceptions of the day-to-day tasks she faces with the child: how does she feel about feeding, changing, crying, etc.? How much control does she attribute to the child in such situations and how much to herself? Is she aware of her own emotional state, of its effect on her baby and its influence on her perception of her baby's behavior? Asking a mother her notion of her baby's motivations provides an excellent means for highlighting her own needs in a situation as well as the interactive nature of their behavior as a pair.

Related to the mother's ability to accurately perceive the mother-infant relationship is an ability to accurately interpret the infant's behavior. This means, of necessity, understanding one's own needs and feelings and making sure they do not interfere with the interpretation. It is essential that she not interpret what goes on in the mother-infant relationship in a highly personal way. Clearly tied to the mother's ability to accurately perceive, interpret and integrate, is an assumption that she possesses certain knowledge about infants and young children. Perhaps more than knowledge it is a basic understanding of infants and the mother-infant relationship.

It is important that mother understand that the infant is, at least in the beginning, completely dependent on her but yet is an autonomous being. The mother must recognize that infants are capable of a reciprocal relationship and that they want to interact; however, their social cues are subtle and at times difficult to interpret. The mother must understand that she needs to provide an atmosphere in which a close emotional relationship with her infant can develop and flourish while, at the same time, allowing the growing child the opportunity to become more independent. In general, the mother needs to be aware that her infant's behavior has meaning. There are a number of behaviors such as mouthing objects, fear of strangers, clinging, separation anxiety, and temper tantrums which have meaning developmentally but for many mothers represent a source of irritation.

We have briefly outlined some of the major issues and content to be considered in developing an intervention program around the personal integration construct. The specific techniques for improving a mother's ability to perceive, interpret, integrate and understand are another question. One thing is certain, these abilities cannot be taught in one class or discussion session. Like almost any intervention, this requires time, energy, repeated working through and emotional commitment on the part of the interviewer that communicates to the mother the value and importance of her own feelings.

We are not describing a training class in child-care techniques (though at times that may be an important first step). While it may be easy to teach specific skills (e.g., feeding techniques), such an approach does not meet the real needs of a mother having difficulty with her child. It may, in fact, be the case that knowledge or technique oriented classes are effective to the extent they touch the more affectively laden issues for the student, that is, the skills issue may in fact be tangential to the more central issue of the mother's emotional readiness to provide nurturance to another person. This argues for a therapeutic rather than a classroom approach to intervention in disturbances of child rearing and prevention of such disturbances. Some of the techniques used by Sprinthall, Kohlberg, Selman and others might be relevant here.

One exercise that may be of value is to videotape a mother and infant interacting and then, in a small group, discuss the meaning of certain infant behaviors, the effects of the mother's actions on the infant and the mother's feelings in the particular situation. Earlier, we discussed the importance of the mother's sensitivity and cooperation during feeding and play situations. Being able to look at the mother's and infant's behavior provides an excellent opportunity for the mother to see certain infant cues and to discuss their meaning and particularly her feelings at the time.

Some additional recommendations are as follows:

1) To deal with mother's fear of pregnancy and her anxiety associated with pregnancy, delivery and the infant. Every effort should be made to reduce her anxieties and to provide her with skills to cope. As pointed out earlier, the effects of anxiety interfere with the mother's learning caretaking skills and in establishing a close emotional tie with the infant. Reducing the anxiety early will make the mother more flexible in her approach to caretaking. Providers of obstetrical care must be sensitive to this and must provide an atmosphere for their patients to express their concerns. Young mothers particularly are very fearful with their infants. If they were to spend more time with their infants during the first few days in the hospital in a highly supportive environment, which provides positive models for interacting with infants, it is likely that they would be more relaxed and confident in dealing with the infant when they go home. In this regard, the current trend in hospital practice to reduce length of stay for

obstetrical cases, is perhaps inappropriate. An ideal arrangement would be for the young anxious mothers to interact during pregnancy with infants in a nursery or day care center. Just being around infants during pregnancy might well reduce the initial fear of being responsible for one's own baby.

One point which needs to be stressed is that any effort to reduce anxiety and teach coping skills needs to be done very early. An anxious mother who has minimal coping and child care skills will most likely resist learning new approaches once she is actually dealing with her infant, since anxiety almost always induces rigidity. What little she does know will be rigidly adhered to and this pattern will be followed in caring for her later children. Intervention dealing with mother's fear and anxiety must begin immediately after the infant is born (or even before) and should be designed particularly for primiparous women.

2) Any efforts at early intervention need to also focus on making the mother aware that there are individual differences in newborns. The mother needs to get to know her infant. This must be done in a "hands-on" experiential way rather than a classroom approach. We talked earlier about certain infant characteristics affecting the quality of care he/she received and we have discussed in detail the importance of the mother's understanding, awareness and sensitivity, all of which need to be considered in early intervention and prevention programs.

3) In a general sense, intervention provides a means for the mother to better cope and become more competent. One important aspect of competence is being able to seek, accept and maintain the support from family and friends. Intervention should focus on those factors such as suspiciousness, anxiety and hostility, which appear to interfere with the mother's social ties. There are a number of programs available for social skills training, some of which are reviewed in a new book by Bellack and Hersen (1979). The family therapy programs which focus on enhancing communication skills would also be useful.

4) When a mother learns a new skill it is important that she be aware of how it affects the child. An important principle for her to learn is to evaluate whether a particular technique is effectivefor her and, if not, she needs to have the flexibility to try something else. Teaching particular skills may prove to be ineffectiveif the mother rigidly applies what she has learned. Whenever the mother implements something new she needs to be aware of its effect and willing to try an alternate approach.

5) The mother must learn to recognize and deal with her own emotional reactions to a situation with her infant, which affect all aspects of relationship and care. Specific skills, knowledge of baby, effects of stress and family support must be understood in light of the mother's level of personal integration. She must be aided in integrating these various aspects of child care with her

own feelings, as described in the earlier discussion in this section.

6) Successful parenting requires a strong commitment on the part of both the mother and father. It was painfully obvious that many of the mothers in our sample had not made this commitment. People who don't freely choose to be parents shouldn't be. In addition to teaching pregnant women to be good mothers we should provide other options to them. Abortion and adoption must be available as alternatives for people who are not interested in becoming parents.

A few years back we were very optimistic that progress would be made toward the understanding and treatment of child abuse and neglect. The National Center on Child Abuse and Neglect and other government agencies funded a number of research, development and demonstration projects. We believe that a number of these projects have been very successful and that their findings have greatly increased our fund of knowledge regarding child abuse and neglect. We are now, however, very concerned because interest in abuse and neglect has greatly declined. There appears to be fewer research projects in the area and it certainly appears that there is a general decline in the amount of federal funding of research in the area. Unfortunately, this decline reflects changes in the interest of funding organizations, researchers and probably society in general rather than decline in the severity of the problem. The fad phenomena unfortunately exists in the scientific, as well as the general, community.

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